

THE NEOTROPICAL ORB-WEAVER GENUS *METAZYGIA* (ARANEAE: ARANEIDAE)

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ABSTRACT. *Metazygia* are Neotropical nocturnal orb weavers. Many species are small, less than 5 mm total length. They are found from the southeastern United States to Argentina, but most species occur in the Amazon area and southeastern South America. Although lacking a paramedian apophysis in the male palpus, they exhibit other characters that suggest that they be grouped (together with *Eustala*) close to *Alpaida*.

There are 86 Neotropical species: 68 new (79%) and only 18 previously known (21%). Also, there are two Nearctic species, *M. carolinensis* and *M. calix*, making a total of 88 species of *Metazygia*. Of the 68 new species, 18 are known from both sexes, 16 from the male only, and 34 from the female only. Six names are synonymized for the first time.

The females of all species are believed to rest in a retreat at the side of the web during daytime, and many build the orb with an open sector adjacent to the retreat.

INTRODUCTION

This is one of a series of revisions of Neotropical orb weavers (complete list in Levi, 1993b). These revisions should make it possible for researchers to identify Neotropical orb weavers, not possible earlier as some previously described species had never been illustrated and males had not been matched to females. Examining and illustrating the holotype specimens of old names is one of the most important tasks of the revisor. After all the genera of the family have been revised, the relationship of the genera to each other can be studied.

METHODS AND MATERIALS

The methods have been described in detail in Levi (1993b). As in previous papers,

eye sizes are expressed as ratios, comparing the diameter of the measured eye (with cornea in profile) to that of the anterior median eyes (Levi, 1993b, figs. 27, 28). Distances between eyes of the anterior row are expressed as diameters of the anterior median eyes (in profile); distances between eyes of the posterior row are given as diameters of the posterior median eyes. The height of the clypeus (the distance between the lower edge of the anterior median eyes and the edge of the carapace) is given in diameters of an anterior median eye (Levi, 1993b, fig. 28f). These measurements are approximate, as araneid eyes are variable and difficult to measure accurately.

Secondary Homonyms. The superb spider catalogs by Petrunkevitch, Roewer, and Bonnet, which so greatly facilitate the work of systematists, lumped genera. As a result of lumping genera, secondary homonyms are created: specific names that are unique in their own genera turn out to be homonyms when placed in the large genera *Aranea* or *Araneus*, having been used with *Aranea* or *Araneus* previously.

Petrunkevitch (1911) and also Roewer (1942) made new names for the secondary homonyms. I have dismissed these new names when returning species to their previous genera. In this I have followed other authors. For example, Petrunkevitch (1911) lumped 18 genera, replacing *Singa moesta* with *metuens*, *Singa maculata* with *tusus*, and *Singa variabilis* with *varians*, among others. These Petrunkevitch replacement names have not been used in Comstock (1912), Gertsch (Comstock, rev. edit.

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Gertsch 1940), or Kaston (1948). All have tried to avoid name changes.

According to Article 59 of the International Code of Zoological Nomenclature (ICZN, 1985), a junior secondary homonym replaced before 1961 is permanently invalid. Article 59b says that if the replacement name for such a junior secondary homonym is the cause of confusion, then the case is to be referred to the Commission. Article 59d says "a species group name rejected after 1960 on grounds of junior secondary homonymy is to be reinstated by anyone who believes the two species group taxa in question are not congeneric. . . ." The newer method (59d) has been used by American arachnologists all along and has avoided confusion.

Roewer (1942, 1955) replaced some secondary homonyms cited in this revision (e.g., *Aranea palloides* Roewer for *Metazygia pallidula*, *Aranea errans* for *Metazygia erratica*). But Roewer had the good judgment not to use Petrunkevitch's replacement names (e.g., for *Singa*). Also, Bonnet (1955-59) did not use the replacement names of Petrunkevitch when returning species to their original genera (e.g., Petrunkevitch changed *Zilla guttata* to *gemellus* when he placed it in *Araneus*, but the name is back to *Zilla guttata* in Bonnet, 1959). Perhaps the International Commissioners should make the rules more flexible.

It is unfortunate that many younger arachnologists still give their new species overworked names such as *pallida*, *maculata*, and *variabilis*, which are likely to have been used before in the same family or in related families and may be the cause for later discovery of secondary homonymy.

Lectotypes. As in previous papers, lectotypes have been designated when syntypes belonged to different species. They were not indicated routinely as an aspect of the revision; there is no requirement to do so (ICZN, 1985: Art. 74). A decision has to be made on whether to designate a male or a female as the lectotype. This choice

may become critical later, if it is found that the presumed species actually consists of sibling species recognizable only in one sex, not in the other.

Collections. Specimens from the following collections were used. I thank the curators for making the material available for this study:

AD	A. Dean, Texas A and M University, College Station, Texas, United States
AMNH	American Museum of Natural History, New York, United States; N. Platnick, L. Sorkin
ANSP	Academy of Natural Science, Philadelphia, Pennsylvania, United States
BMNH	Natural History Museum, London, England; P. Hillyard, F. Wanless
CAS	California Academy of Sciences, San Francisco, United States; W. J. Pulawski, D. Ubick
CD	C. Deeleman, Ossendrecht, Netherlands
CUC	Cornell University Collection, kept in the AMNH; N. Platnick
CV	Carlos Valderrama A.; Bogotá, Colombia
DU	D. Ubick, San Francisco, California, United States
FSCA	Florida State Collection of Arthropods, Gainesville, Florida, United States; G. B. Edwards
HECO	Hope Entomology Collections, Oxford University, Oxford, England; J. Lansbury
IBNP	Inventario Biológico Nacional, San Lorenzo, Paraguay; J. A. Kochalka
IELP	Instituto de Ecología, Casilla 20127, La Paz, Bolivia; E. Forna, J. Coddington
IESC	Instituto Ecología y Sistemática, Cuban Academy of Science, Havana, Cuba, L. Armas

INPA	Instituto Nacional de Pesquisas da Amazônia, Manaus, Est. Amazonas, Brazil; C. Magalhães		de San Marcos, Lima, Peru; D. Silva D.
IRSNB	Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium; L. Baert	MZSP	Museu de Zoologia, Universidade de São Paulo, São Paulo, SP, Brazil; P. Vanzolini, J. L. Neme
JEC	J. Carico, Lynchburg, Virginia, United States	MZUF	Museo Zoologico de "La Specola" Università di Firenze, Florence, Italy; S. Mascherini
JMM	J. Maes, León, Nicaragua	NMW	Naturhistorisches Museum, Vienna, Austria; J. Gruber
MACN	Museo Argentino de Ciencias Naturales, Buenos Aires, Argentina; E. A. Maury	NRMS	Naturhistoriska Riksmuseet, Stockholm, Sweden; T. Kronstedt
MCN	Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil; E. H. Buckup	PAN	Polska Akademia Nauk, Warszawa, Poland; A. Riedel, J. Prószynski, A. Słojewska, E. Kierych
MCP	Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre, RS, Brazil; A. A. Lise	PMY	Peabody Museum, Yale University; C. Remington, D. G. Furth
MCZ	Museum of Comparative Zoology, Cambridge, Massachusetts, United States	REL	R. E. Leech; Edmonton, Alberta, Canada
MECN	Museo Ecuatoriano de Ciencias Naturales, Quito, Ecuador; L. Avilés	SMF	Forschungsinstitut Senckenberg, Frankfurt am Main, Germany; M. Grasshoff
MEG	M. E. Galiano; Buenos Aires, Argentina	SR	Susan Riechert; Knoxville, Tennessee, United States
MIUP	Museo de Invertebrados, Universidad de Panamá, Panama City, Panama; D. Quintero A.	USNM	National Museum of Natural History, Smithsonian Institution, Washington, D.C., United States; J. Coddington
MLP	Museo de Universidad Nacional, La Plata, Argentina; R. F. Arzopide	ZMB	Zoologisches Museum der Humbolt Universität, Berlin, Germany; M. Moritz
MNHN	Muséum National d'Histoire Naturelle, Paris, France; J. Heurtault, C. Rollard	ZMK	Zoologisk Museum, Copenhagen, Denmark; H. Enghoff
MNHNC	Museum Nacional de Historia Natural, Havana, Cuba; G. Alayón	ZSM	Zoologisches Staatssammlung, Munich, Germany
MNRJ	Museu Nacional, Rio de Janeiro, Brazil; A. Timotheo da Costa		
MNSD	Museo Nacional de Historia Natural, Santo Domingo, República Dominicana; Félix Del Monte		
MUSM	Museo de Historia Natural, Universidad Nacional Mayor		

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Metazygia F. P.-Cambridge

Metazygia F. P.-Cambridge, 1903: 501. Type species by original designation *M. wittfeldae* (McCook). The gender of the name is feminine.

Diagnosis. *Metazygia* differs from other araneid genera by having a glabrous carapace with posterior median eyes that face up and almost touching each other, and an oval abdomen, that is widest at the middle (Figs. 5, 12).

In many species, but not all, the female has a round, laterally compressed scape on the ventral face of the epigynum (Figs. 1-4).

The palpus of the male has only one patellar seta and lacks a paramedian apophysis (Figs. 45, 112).

Contiguous posterior median eyes are found also in *Larinia* and *Cyclosa* and among some species of *Alpaida*, *Araneus*, *Aculepeira*, and *Dubiepeira*. *Larinia* differs from *Metazygia* by having an elongate abdomen. These genera (except *Alpaida*) differ from *Metazygia* by having the carapace setose and by the annulate scape. All except *Alpaida* and *Cyclosa* have two macrosetae on the palpal patella, and the male palpus has a distal hematodocha. *Cyclosa* differs by having the carapace narrow in the cephalic region. Both *Alpaida* and *Cyclosa* have a paramedian apophysis in the male palpus. *Metazygia* females can easily be confused with those of *Singa*, *Nuctenea* (*Larinioides*), and *Zygiella* because of similar abdomen coloration and shape. These three genera are not found in the Neotropical region, although *Zygiella x-notata* (Clerck) and *Larinioides sclopetaria* (Clerck) are common in Chile where they have been introduced. No *Metazygia* species are known from Chile. *Zygiella* males differ from *Me-*

tazygia by having a cone-shaped palpal tibia, as is common in tetragnathids; *Nuctenea* and *Larinioides* males have two palpal patellar macrosetae. Some *Metazygia* females have been confused with *Chrysometa*, but this has tetragnathid characters (Levi, 1986). The species of these similar genera all make a tube-shaped, silken retreat.

It is possible to have doubts and misplace *Metazygia* species if only a female is available.

Relationship. *Metazygia* is closest to the genus *Eustala*. Shared apomorphies include the anteriorly projecting scape in some *Metazygia* females (Figs. 263, 270), the lateral placement of the median apophysis in the male palpus (M in Figs. 44, 45), and, in the palpus of larger species, a semitransparent blister below the distal prong of the terminal apophysis (B in Figs. 45, 46). In spite of these unusual shared characters, *Eustala* is distinguished by the position of the posterior median eyes, on a slight swelling and facing laterally, and by the shape of the abdomen, subtriangular to elongate, widest anteriorly and often with a median white streak on the underside. Also, the carapace of *Eustala* is setose, while that of *Metazygia* is glabrous (Table 1).

Both *Metazygia* and *Eustala*, although lacking a paramedian apophysis in the male palpus (Figs. 45, 112), have to be grouped near *Alpaida* and other genera having a paramedian apophysis. They mostly have only a single palpal patellar seta and the position of the conductor of the male palpus is usually on the inside face of the tegulum (and not on the outside rim of the tegulum as in *Araneus*-related genera). There is a relative absence of the distal hematodocha in the male palpus, a structure also prominent in *Araneus*-related genera. There is abundant pigment around the eyes in *Metazygia* species, as there is in *Alpaida* species. Many of the genera related to *Alpaida* (but not *Alpaida* or *Metazygia*) have abdomens with two or three posterior, median humps on the ab-

TABLE I. DIFFERENTIAL CHARACTERS OF *PARAWIXIA* (PARW), *ERIOPHORA* (ERIO), *ACANTHEPEIRA* (ACAN), *WAGNERIANA* (WAGN), *EUSTALA* (EUST), *ACACESIA* (ACAC), *ALPAIDA* (ALPA), *OCREPEIRA* (OCRE), *CYCLOSA* (CYCL), AND *METAZYGIA* (METZ).

	PARW	ERIO	ACAN	WAGN	ACAC	ALPA	OCRE	CYCL (prov.)	METZ	EUST (prov.)
Pattern										
Carap. glabrous	-	-	-	-	-	[+*]	-	-	[+]	-
Paired spots on carap.	+*	-	+	-	-	-	-	-	-	-
Marks between ME and LE	+*	-*	+	-	-	-	-*	-	-	-
Black eye rings	-	-	-	-	-	[+*]	-	-	+*	-
Sides of thoracic reg. black	-	-	-	[+*]	-	-	-*	-	-	-
Pattern on sternum	[+*]	-	-	-	-	-	-	-	-	-
Abd. v. black with white streak	-	-	-	-	-	-	-	-	-	[+]
Female morphology										
Eye reg. narrow	-	-	-	-	[+]	-	-	+	-	-
LE on sides of tuber.	+	-	+	-	-	-	-	-	-	-
PME on slight swelling	-*	-	-	-	+	-	+*	-	-	+
PME touch	-	-	-	-	-	-	-	+	[+]	-
Carap. swollen behind eyes	+	+	+	+	-	+	+*	-	-	-
Abd. with tubers	4-15	0-3	12+	9-15	-	-*	[2*]	0-2	-	-*
Ant. median abd. tuber	-*	-	+	-	-	-	-	-	-	-
Abd. subspherical	+*	+	+	-	-	-	-	-	+	+*
Abd. oval	-*	-	-	+	+	+	-*	+	[+]	+*
Abd. with tail	-	-	-	+*	-	-	-	+*	-	+*
Three median post. tubers	+	-*	+	+	-	-	-	-	-	-
Abd. glabrous	-	-	-	-	-	[+]	-	-	[+]	-
Epigynum										
Scape	+	+	+	-	+	-	+*	+	+*	+
Lat. flattened scape	-	-	-	-	-	-	-	-	[+*]	-
Lobe	-	-	-	+	-	+	-*	-	+*	-
Knob at tip	-*	-	-	+	-	-*	-	-	-	-
Notch on face	-	-	-	-	-	[+*]	-	-	-	-
Scape ant. projection	-	-	-	-	-	-	-	-	-*	[+]
Male morphology										
Ceph. reg. wide	-	-	[+]	-	-	-	-	-	-	-
Hook on coxa I	+	+	-	+	+	+*	+	+*	+	+
Macrosetae on coxa III, IV	+*	+*	+*	-	+*	+*	+*	+*	+*	-
Trochanter IV macrosetae	+*	+*	-	-	-	-*	-	-	-	-
Tibia II modified	-	-	-	-	+	-*	-	-	-	-
Carapace with lobes	-	-	-	-	-	-	-	-	[+*]	-
Fangs clasping	-	-	-	-	-	-	-	-	[+*]	-
Palpus										
Much wider than long	-	-	-	-	-	-	-	[+]	-	-
Patella macrosetae	1**	[2**]	1	1	1	1*	1	1	1	1
Y narrow	-	[+]	-	-	-	-	-	-	-	-
PM present	+	+	+	+	+	+	+	+	-	+
M lateral	-	-	-	-	-	-	+	-	+	-
SA blister-shaped	-	-	-	-	-	-	-	-	+	-
M soft	-	-	-	-	-	-	-	-	-*	-

* There are exceptions.

** *P. bistrata* and *E. nephiloides* (Levi, 1971) have a large macroseta and a smaller one on the male* palpal patella.

Bracketed characters are autapomorphies for the genus.

Abbreviations: abd., abdomen; ant., anterior; carap., carapace; ceph., cephalic; post., posterior(ly); prov., provisionally; reg., region; tuber(s)., tubercle(s); v., venter. LE, lateral eyes; M, median apophysis; ME, median eyes; PM, paramedian apophysis; PME, posterior median eyes; Y, cymbium.

Data from Levi, 1971, 1976, 1977, 1988, 1991b, 1992, 1993b.

domen (*Eriophora*, *Parawixia*, *Wagneriana*, *Acanthepeira*, and also *Eustala*), a feature uncommon in any other spider. Perhaps the lack of paramedian apophysis and the sometimes intermediate position of the conductor (Fig. 112) indicate an intermediate relationship (Table 1).

Description. The cephalothorax is orange to orange-brown in alcohol, the legs rarely with dark rings. The abdomen has a characteristic folium pattern consisting of pairs of brackets (Figs. 5, 124) or sometimes a *Zygiella*-like pattern (Figs. 58, 110). The smallest species have a white (green or silvery when alive) abdomen with a black band around the anterior margin (Figs. 325, 330). The green color, which washes out in alcohol, is known for *M. octama*, *M. serian*, and *M. lopez* (Eberhard, personal communication). The black band around the anterior is not found in other Neotropical araneids. The carapace has few setae, and the median eye quadrangle is always narrower posteriorly (except in *M. vaupes*, where it is square). The anterior median eyes are slightly larger than the posterior medians, and the laterals are always the smallest. The height of the clypeus is less than the diameter of an anterior median eye. The eye region is usually all black but in some species lacks pigment (Fig. 336). The cephalic region of the carapace is more than half the width of the thoracic region; in *M. uma* (Fig. 224), it is almost equal in width.

The abdomen is oval, widest in the middle. In some small species, it is almost spherical (Figs. 306, 307); in some large species, almost cylindrical (Fig. 228). Sometimes the abdomen is anteriorly flattened (Fig. 317) or anteriorly projecting (Fig. 242) or has an anterior notch (*M. vaupes*, Fig. 301).

The males of three species have modified fangs (see later).

Genitalia. In the larger species, the epigynum has a laterally flattened scape, which is round in lateral view (Figs. 1-4, 69-71). The greatest diversity of epigyna occurs in the small species, where some

even have a long scape (Figs. 322, 328). In many species, the scape appears to be torn off by the male after mating, and it may be unusual to find a female with the scape intact (Figs. 277-280). (Removal of the scape by the male may protect its sperm by preventing additional female matings.) Often it is not known whether there is a scar from a torn scape or the middle area is sculptured (Figs. 285-287, 365, 366). Part of the base of the epigynum is torn off in *M. mundulella* (Fig. 234) and may be missing also in *M. saturnino* (Figs. 197, 198) and *M. amalla* (Figs. 247, 248). While it is common for an araneid male to remove the scape, destruction of the base of the epigynum is not otherwise known in araneid spiders. In *M. erratica*, the opening of the epigynum is sealed with an amorphous black secretion that is difficult to remove (Figs. 370-372). A similar brown exudate may be present on the epigynum of *M. lopez*. In still other species, part of the male embolus breaks and plugs the opening of the epigynum (Fig. 40).

Internal female genitalia were examined in two pairs of species: *M. wittfeldae* and *M. dubia*, and *M. zilloides* and *M. keyserlingi*. No differences were found in the similar species that might be useful for determinations.

Male. Males of some small species have the carapace margin lobed above the first coxae (Figs. 384, 390), a modification not seen in males of other genera. All males have one macroseta on the palpal patella. Males of all except three species (*M. gregalis*, *M. benella*, and *M. yobena*) have a tooth on the endite that faces a tooth or tubercle at the proximal end of the palpal femur. These three species also have modified fangs: the fangs have a lobe (Figs. 261, 262, 269, 276), presumably to hold the female during mating. *Metazygia gregalis* also has the distal end of the chelicerae modified as a protecting flange (Fig. 261).

All species have a small hook on the distal margin of the first coxa, but if very small, the hook may have moved, to face

the second coxa. The second tibiae are usually thicker than the first and are armed with macrosetae. Males may have macrosetae on the first tibia, also. Some males have a short macroseta on the fourth coxa and sometimes on the third, as in related genera (those with one patellar macroseta).

Some species have a large terminal apophysis (A) in the palpus, with a terminal prong above a transparent blister (B in Figs. 45, 112); others have lost the terminal apophysis and have only one sclerite beyond the embolus (E) or none (Fig. 260). The part remaining with the embolus (Figs. 221, 230, 237) might be a reduced terminal apophysis or the embolus lamella (L of Figs. 45, 54). There is no way at present to determine the homology. Here it is called the "lamella" (in keys and descriptions). None of the *Metazygia* species has a paramedian apophysis. As in *Eustala*, the median apophysis has moved ventrally to the side of the palpus (M in Figs. 44, 45, 112, 113) and has lost its sclerotization, often becoming soft and white. The conductor (C) has moved in the same direction, and there is no projection from the conductor toward the cymbium, as in *Alpaida*, to form a paramedian apophysis.

The position of the conductor in araneids may be on the rim of the tegulum, visible in ventral view as in *Neoscona* (Levi, 1993a, C in figs. 6, 7, 16), in *Dubiepeira* (Levi, 1991a, center of fig. 525, C in fig. 526), and in many species of *Araneus* (Levi, 1991a, figs. 3, 14, the light, round sclerite in center of fig. 22), or it may be on the inside face of the tegulum, closer to the cymbium, as in most species with a paramedian apophysis. In the latter case, it is also surrounded on the outside by the wall of the tegulum, as in *Micrathena* (Levi, 1985, C in figs. 6, 9), *Alpaida* (Levi, 1988, C in fig. 10), and *Wagneriana* (Levi, 1991b, fig. 19). In *Metazygia*, which lack a paramedian apophysis, the conductor may be on the rim, as in *M. crewi* (C in Fig. 113) and *M. isabelae* (at 8 hr in Fig. 92), or inside, below the rim of the tegulum, as in *M. castaneoscutata* (center of Fig. 308),

or below the rim but hanging over it, as in *M. zilloides* (C in Figs. 44, 45) and *M. gregalis* (at 10 hr in Fig. 259, C in Fig. 260).

In addition to the blister-shaped subterminal apophysis and the lateral position of the median apophysis, there are additional peculiarities in the palpus of the larger species. The radix is pushed "down," out of the way, and is in a much "lower" position (R in Figs. 44, 45, 112) than in species of other genera. Also, there is a stipes (I) in the form of a band that overlaps the dorsal surface of the palpal bulb (bottom third of Fig. 46), to which the embolus and its lamella are attached (bottom left of Fig. 46, and also Fig. 112). Finally, the median apophysis may be in a more common position (at 5 hr in Fig. 243; M in Fig. 245), the radix farther "up" in the palpus (below the embolus in Fig. 308).

There are many small species in *Metazygia*. As is common in spiders, the smallest species display the greatest diversity in genitalia. Great diversity in genitalia is also known for *Micrathena* species, mostly medium-sized. Matching males with females of the same species is difficult because so many species are similar in appearance, differing only in genitalic structures.

It has not been possible to clearly group *Metazygia* species into subgenera because the diversity of characters does not fall into correlative patterns. The larger species have a pattern of brackets on the abdomen (Fig. 5), have a terminal apophysis in the palpus (A in Fig. 45), and have the median apophysis (M in Figs. 44, 45) soft and toward the side. Small species have a black band around the anterior of the abdomen (Figs. 381, 404), a diversity of female epigyna, have the male palpus without terminal apophysis, and the median apophysis in the more common araneid position at 4–5 hr in the left palpus (Figs. 383, 389). However, the *Metazygia curari* female (Figs. 144–146) has the characteristic flattened, round scape, as does *M. wittfeldae* (Figs. 1–4), and the male lacks a terminal

apophysis (Fig. 148). *Metazygia mundulella* also has this kind of scape (Figs. 231–234), but the male has a median apophysis with sclerotized points at 5 hr in the left palpus (Fig. 237). *Metazygia serian* (Fig. 175) and *M. adisi* (Fig. 141), with a flattened round “*Metazygia*” scape, have the black band of small species around the anterior of the abdomen.

Natural History. All species build a vertical orb and have a retreat that is usually above the web and attached to a branch, wall, ceiling, or curled leaf. The spider rests in the retreat during the day and in the center of the web at night. Some webs have a vacant sector in the part of the orb adjacent to the retreat (Plate 1): the vacant sector orb is known for *M. wittfeldae*, *zilloides*, *keyserlingi*, *chicanna*, and *incerta*. The webs of *M. keyserlingi* and *M. laticeps* are kept up during the day and have a signal line (Eberhard, personal communication). “All other species built at night, many (all?) quite early in the evening and not generally have either an open sector or a recognizable retreat” (Eberhard, personal communication). *Metazygia incerta* rebuilds orbs every two to four days (Buskirk, personal communication). Some species take down their webs during the day (Lubin, 1978).

While *Metazygia wittfeldae* is usually solitary, the web size and structure are the same when they aggregate and the angle of the orb continues to vary from just horizontal to vertical at Monteverde, Costa Rica (Buskirk 1986).

Eberhard (personal correspondence) writes,

I have watched both *gregalis* and *octama* build in great hurry (rapidly, with little exploratory behavior) just as the light is failing, and have web photos of *chenevo* . . . at 6 pm; *serian* at 5 pm, *lopez* at 7 pm;

wittfeldae here [Costa Rica] also builds early in the evening. Thus I suspect these species are working on the flush of insects which fly just at dusk. One *keyserlingi* also had a web up at night and since I saw another web of this species which was rebuilt around noon after rain, I suspect it is like *gregalis* in having not one but a series of webs during each 24 hour period. . . .

Species occur often in great abundance, females and males together. But because they are difficult to collect by sweeping or beating, many species are present in collections only as single individuals.

The following observations are excerpted from Eberhard (personal communication):

Relatively open habitat (rel. early secondary growth, grass): *lopez*, *gregalis*, *octama*, *pallidula*, *wittfeldae*, *yobena*, *benella*, *lazepa*, *serian*, *chenevo*. I suspect some species at least of preferring to be near water (esp. *pallidula*), and of liking twigs, barbed wire or other relatively rigid supports for their webs, but have seen *yobena* and *chenevo* on webs in tall grass. On buildings (especially near lights): *wittfeldae*, *gregalis*, *dubia*. Silk retreats, more or less cylindrical (open at both ends—spider will leave on rear if bothered from front side) during the day: *octama*, *gregalis*, (in this case, often in cracks or other protected sides); the retreat of this species generally has no connection whatsoever with the web, which is often left intact during the day when the spider is in its retreat, and it is thus generally impossible to associate a given spider with the vestiges of a given web during the day. In contrast, *octama* removes the web completely during the day, I think usually without a single line being left up, and its retreat is at least sometimes on a green leaf in relatively exposed posi-





Map 1. The number of species of *Metazygia* in various areas.

tion. I don't know much about the retreats of the other nocturnal species (and since retreats may be disassociated from webs, I was unlikely to be aware of the spider's retreat when I found the spider on a web at night).

Dynamics of webs: I can only give you details for *gregalis* and *octama*. The *octama* web seems relatively fragile, and the spiders had often torn down the web and were feeding on a ball of prey not more than a couple of hours after dusk. I never saw one of these (they lived in our yard in Cali) put up another web, but might have missed it (especially if a second web was put up just before dawn and then soon torn down). I had some students do all night projects with *gregalis*, and they found that the same individual built two to three webs per night. Generally the first web was just at dusk, and the others substantially later at night.

M. gregalis is a generalist when it comes to feeding. I have the impression that intraspecific variation in the form in the *Metazygia* orb is relatively high in *M. gregalis*.

Sizes of prey items are reported in Castillo and Eberhard (1983).

Distribution. *Metazygia* is known only from the Americas. There are several pairs of very similar allopatric species, one north, the other south, without overlap: *wittfeldae* and *dubia*, and *zilloides* and *keyserlingi*.

Metazygia species of the southeastern United States, not otherwise cited in this paper, are as follows: *M. carolinensis* (Archer) (the male is unknown); and *M. calix* (Walckenaer), NEW COMBINATION. *Metazygia calix* (Levi, 1976, figs. 137–144) was placed in *Alpaida* but has genitalia similar to those of *M. laticeps* (Figs. 226, 227, 230) and *M. sendero* (Figs. 216, 217, 221).

Misplaced Species. *Metazygia livida* Mello-Leitão, 1941: 151, 1♀. Female from Argentina is a *Dictyna* (Dictynidae).

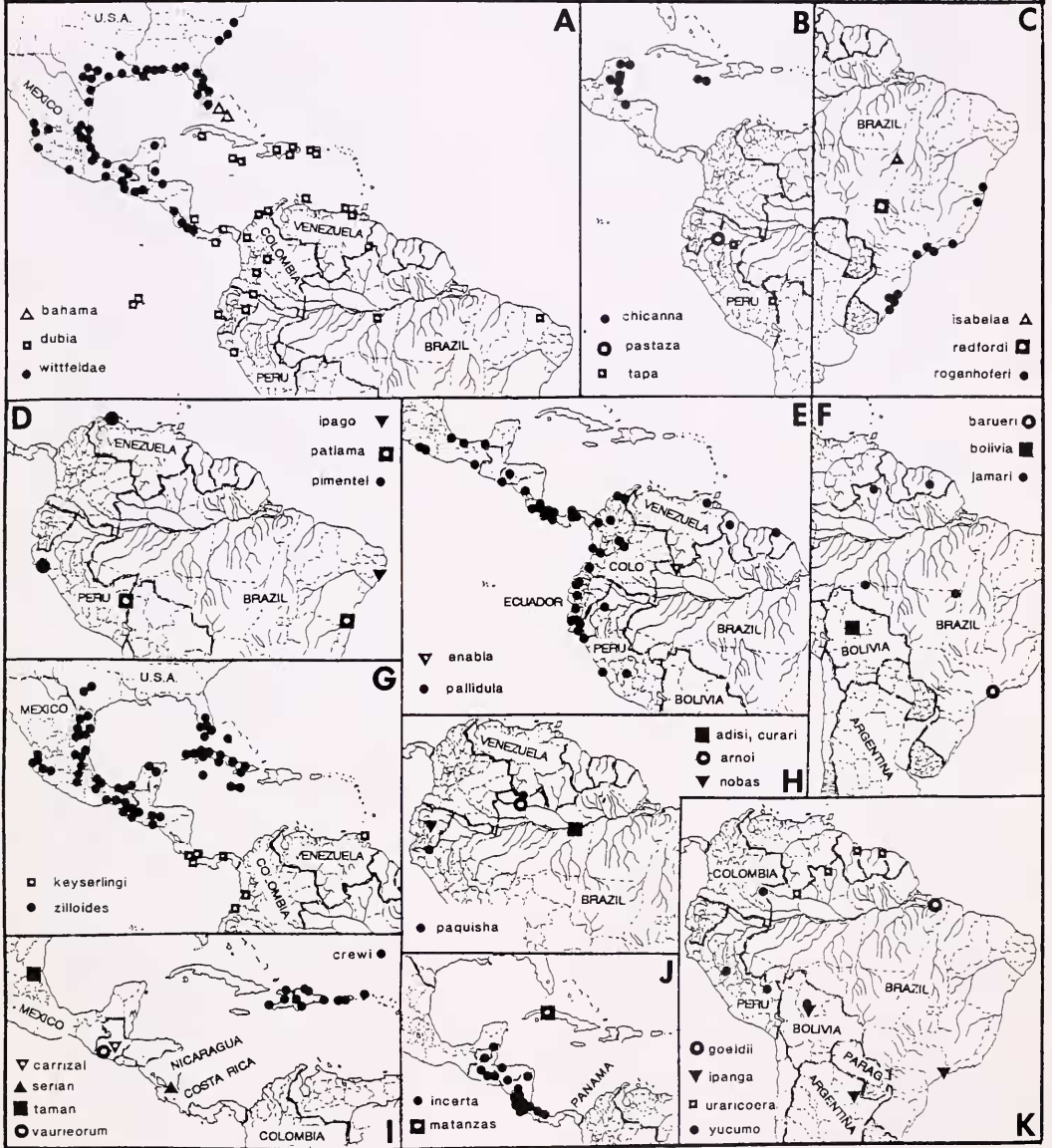
Metazygia unquiformis:—Valle and Valle, 1972: 33 is *Alpaida veniliae* (Keyserling) (Levi, 1988: 402).

Keys. Keys are difficult to construct for species of which only one or a few individuals are known. With few specimens, one does not know whether or not the coloration is characteristic, whether or not the epigynum has been torn apart by a male when mating, whether the male has a virgin embolus with a cap or if he has mated, and whether all males of the species have a macroseta on the fourth coxa or only the one sampled.

For using the key, the female's epigynum has to be slightly pulled out with a curved needle to see the posterior face of the structure.

KEY TO FEMALE *METAZYGIA*

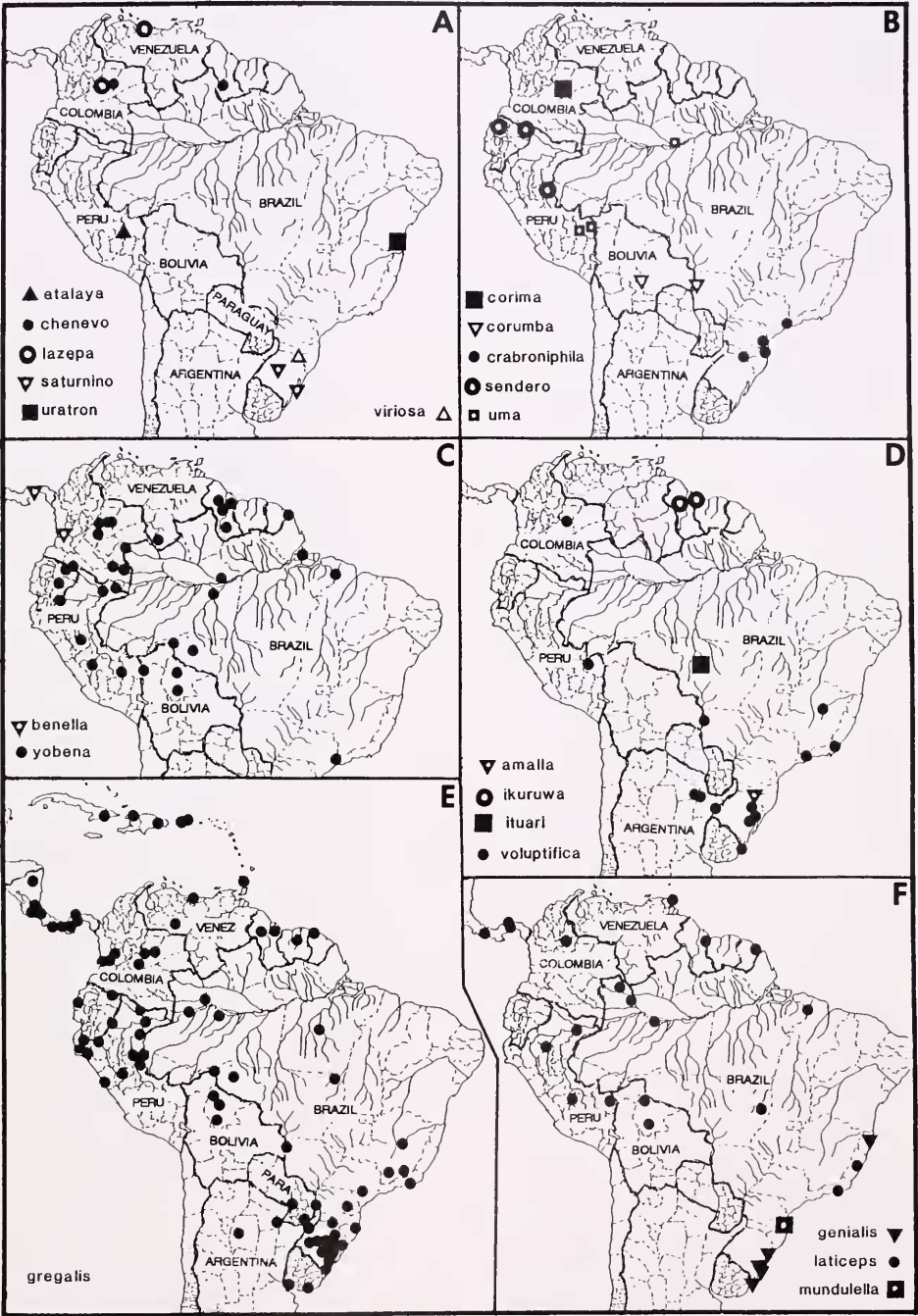
- | | | |
|-------|--|-----------------|
| 1. | Epigynum with an anterior projection (Figs. 254, 263, 270) | 2 |
| - | Epigynum otherwise | 4 |
| 2(1). | Epigynum in ventral view wider than long (Fig. 254); Central America, West Indies to northern Argentina (Map 3E) | <i>gregalis</i> |
| - | Epigynum in ventral view longer than wide (Figs. 263, 270) | 3 |
| 3(2). | Epigynum with a deep notch on the posterior border (Fig. 270); anterior projection without pair of wings (Fig. 270); Amazon area; São Paulo (Map 3C) | <i>yobena</i> |



Map 2. Distribution of *Metazygia* species.

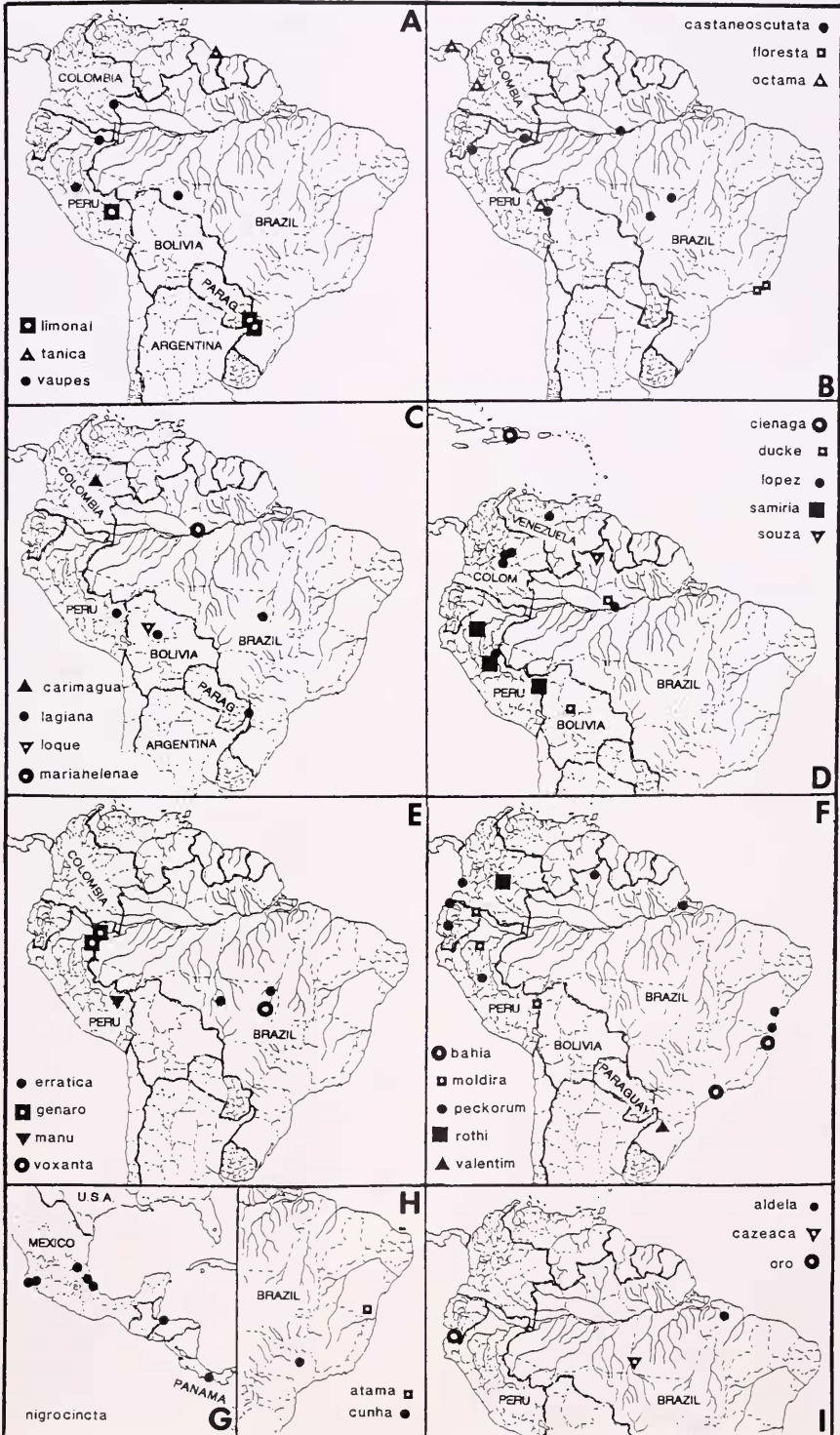
- Epigynum without notch on posterior border (Fig. 263); anterior projection with a pair of wings (Fig. 263); Panama, Colombia (Map 3C) *benella*
- 4(1). Epigynum in posterior view with a median plate forming a septum in an hour glass-shaped depression as in Figure 108; Greater Antilles (Map 21) *crewi*
- Epigynum with median posterior plate otherwise 5
- 5(4). Epigynum in ventral view with a scape that extends beyond the posterior margin of the base (Figs. 193, 277, 298, 303, 314, 322, 328) 6
- Epigynum with scape not extending beyond posterior margin (Figs. 2, 55, 231) 12
- 6(5). In ventral view scape extending from epigynum's posterior margin (Figs. 298, 314) 7

-	Scape extending from middle or anterior of basal plate (Figs. 193, 277, 303, 322, 328)	8	18(17).	Openings anterior, lateral (Figs. 39, 48)	19
7(6).	Epigynum with notch on each side (Fig. 298), anterior of abdomen indented (Fig. 301); western Amazon area (Map 4A)	<i>vaupes</i>	-	Openings near median, indistinct (Fig. 158); western Amazon area (Map 2K)	<i>yucumo</i>
-	Epigynum without notch (Fig. 314), abdomen oval to subspherical (Fig. 317); Rio de Janeiro State, Brazil (Map 4B)	<i>floresta</i>	19(18).	United States to Honduras, West Indies (Map 2G)	<i>zilloides</i>
8(6).	Scape attached on anterior of base (Figs. 193, 277, 328)	9	-	Costa Rica, Trinidad to Colombia (Map 2G)	<i>keyserlingi</i>
-	Epigynum with scape attached in middle of plate (Figs. 303, 322)	11	20(16).	Abdomen with black band around anterior (Fig. 175); Costa Rica (Map 2)	<i>serian</i>
9(8).	Scape thick and with a deep groove (Fig. 193); Bahia State, Brazil (Map 3A)	<i>uratron</i>	-	Abdomen otherwise	21
-	Scape otherwise	10	21(20).	Openings round in center of each side (Fig. 55), scape small, light, indistinct (Fig. 55); southern Mexico to Honduras, Jamaica (Map 2B)	<i>chicanna</i>
10(9).	Scape thin and transparent (Fig. 328); Amazon area to Misiones Prov., Argentina (Map 4C)	<i>lagiana</i>	-	Openings tiny notches toward posterior of base, scape large, distinct (Fig. 121); Mexico (Map 2I)	<i>taman</i>
-	Scape thick, opaque (Fig. 277); Amazon area to northern Argentina (Map 3D)	<i>voluptifica</i>	22(14).	In posterior view of epigynum, width of median plate equal to or less than that of laterals (Figs. 63, 95) or median plate T-shaped with vertical piece narrow (Figs. 139, 165)	23
11(8).	Epigynum with notch on each side in posterior view (Fig. 323); Mexico, Central America (Map 4G)	<i>nigrocincta</i>	-	In posterior view median plate wider than laterals (Figs. 30, 36, 70, 126) or otherwise	26
-	Epigynum with posterior view otherwise (Fig. 305); Amazon area (Map 4B)	<i>castaneoscutata</i>	23(22).	A scale on each side of epigynum as in Figures 94 and 95; southeastern Brazil (Map 2C)	<i>rogenhoferi</i>
12(5).	Abdomen with paired, dark patches (Fig. 90); Goiás State, Brazil (Map 2C)	<i>redfordi</i>	-	Epigynum without scale (Figs. 62, 139, 165)	24
-	Abdomen marked otherwise (Figs. 58, 175)	13	24(23).	Median plate T-shaped (Figs. 139, 165)	25
13(12).	Epigynum with scape round, laterally flattened (Figs. 1-4, 62-64, 158-160, 164-166)	14	-	Median plate otherwise (Fig. 63); western Amazon area (Map 2B)	<i>tapa</i>
-	Epigynum otherwise (Figs. 114, 133, 189, 370)	42	25(24).	Arms of T-shaped median plate constricted at base and pointed (Fig. 139); Amazon area (Map 2H)	<i>adisi</i>
14(13).	Epigynum with bordered depression or opening, visible in ventral view (Figs. 40, 55, 74, 87, 158, 168, 172)	15	-	Arms not constricted (Fig. 165); southern Brazil, northern Argentina (Map 2K)	<i>ipanga</i>
-	Epigynum otherwise (Figs. 2, 35, 129, 144, 231)	22	26(22).	Base of epigynum on each side with shallow lateral notch as in Figures 231 and 234; southeastern Brazil (Map 3F)	<i>mundulella</i>
15(14).	Openings oval, very large and on each side of epigynum (Fig. 74); Mexico, to Guianas and Peru (Map 2E)	<i>pallidula</i>	-	Base without such notches	27
-	Openings otherwise (Figs. 40, 48, 55, 121, 158, 159)	16	27(26).	Margin of base in ventral view entire, without notches on sides (Fig. 69); Central America (Map 2J)	<i>incerta</i>
16(15).	Openings along anterior of plate (Figs. 40, 49, 158, 168)	17	-	Margin of base otherwise (Figs. 22, 100, 121, 181)	28
-	Openings in middle or posterior	20	28(27).	Folds posterior to scape in ventral view (Fig. 100); São Paulo State, Brazil (Map 2F)	<i>barueri</i>
17(16).	In posterior view epigynum longer than wide; with narrow median plate (Fig. 169); northern Amazon region, Guianas (Map 2K)	<i>urariocoera</i>	-	Epigynum otherwise	29
-	In posterior view epigynum wider than long, median plate wide (Figs. 41, 50, 159)	18	29(28).	A transverse bar posterior to scape in ventral view as in Figure 181; Colombian Amazon area (Map 3A)	<i>lazepa</i>
			-	Epigynum otherwise	30



Map 3. Distribution of *Metazygia* species.

- 30(29). A dark area on each side of scape in ventral view as in Figure 125; Amazon area (Map 2H) *paquisha*
- Epigynum otherwise 31
- 31(30). In lateral view scape about twice as long as wide (Figs. 83, 146) 32
- In lateral view scape about as long as wide (Figs. 18, 37, 123, 131) 33
- 32(31). Abdomen with a pair of dorsal, longitudinal white lines (Fig. 147); Amazon area (Map 2H) *curari*
- Abdomen with a pair of dorsal, longitudinal dusky bands (Fig. 84); Neblina area of Amazon (Map 2E) *enabla*
- 33(31). Abdomen oval, about three quarters as wide as long 34
- Abdomen elongate, about two thirds as wide as long (Fig. 153), epigynum as in Figures 150-152; Bolivia (Map 2F) *bolivia*
- 34(33). Posterior median plate with a pair of notches on each side as in Figures 30 and 178 35
- Posterior median plate otherwise 36
- 35(34). In ventral view length of scape about two thirds length of base (Fig. 177); Guyana (Map 3A) *chenevo*
- In ventral view length of scape less than half length of base (Fig. 29); Peruvian Amazon to Bahia State, Brazil (Map 2D) *patiamma*
- 36(34). Median plate in posterior view heart-shaped (Fig. 130); Ecuador (Map 2H) *nobas*
- Median plate otherwise (Figs. 23, 36, 122) 37
- 37(36). Posterior median plate hexagonal (Fig. 122); Mexico (Map 2I) *taman*
- Posterior median plate otherwise (Figs. 23, 36) 38
- 38(37). Epigynum in ventral view with a slit depression on each side as in Figure 35; Pernambuco, Brazil (Map 2D) *ipago*
- Epigynum otherwise (Figs. 1, 2, 9, 16, 22) 39
- 39(38). Abdomen with paired spots (Fig. 25); posterior median plate about as long as wide (Fig. 23); Venezuela, Peru (Map 2D) *pimentel*
- Abdomen with folium (Figs. 5, 12, 19); posterior median plate slightly wider than long (Figs. 3, 10, 17) 40
- 40(39). Bahama Islands (Map 2A) *bahama*
- United States to northern South America, West Indies 41
- 41(40). Base of epigynum almost twice as wide as long in ventral view (Fig. 2); United States to Costa Rica (Map 2A) *wittfeldae*
- Base of epigynum narrower, about three eighths as long as wide (Fig. 16); Costa Rica, West Indies, Galapagos to northern Brazil and Peru (Map 2A) *dubia*
- 42(13). Epigynum with set off scape (Figs. 133, 185, 208, 309, 378) 43
- Epigynum without scape or with only scars of torn scape (Figs. 280, 285, 292, 360, 370, 391) 49
- 43(42). Scape with transverse wrinkles (Fig. 208); Cuba (Map 2J) *matanzas*
- Scape smooth (Figs. 133, 185, 189) 44
- 44(43). Scape with dent on each side as in Figure 185; Peruvian Amazon (Map 3A) *atalaya*
- Scape otherwise 45
- 45(44). Scape ventrally flattened (Figs. 189, 378) 46
- Scape knob-like (Figs. 114, 133, 309) 47
- 46(45). Scape subtriangular (Fig. 378); Peruvian Amazon region (Map 4E) *genaro*
- Scape oval (Fig. 189); Colombian Amazon region (Map 3B) *corima*
- 47(45). Posterior median plate with concave sides (Fig. 310); Panama, Colombia (Map 4B) *octama*
- Posterior median plate convex on each side (Figs. 115, 134) 48
- 48(47). Posterior median plate wider than long (Fig. 115); Guatemala (Map 2I) *vaurieorum*
- Posterior median plate almost as wide as long (Fig. 134); Lower Amazon area (Map 2K) *goeldii*
- 49(42). Epigynum in posterior view longer than wide (Figs. 240, 338) 50
- Epigynum in posterior view wider than long (Figs. 361, 386) 51
- 50(49). Posterior median plate narrower dorsally than ventrally (Fig. 338); Bolivian Amazon area (Map 4C) *loque*
- Posterior median plate almost rectangular (Fig. 240); coast of southeastern Brazil (Map 3F) *genialis*
- 51(49). Epigynum with scars, scape usually torn off (Figs. 197, 198, 248, 280, 292) 52
- Epigynum without distinct scars (Figs. 216, 226, 365, 391) 58
- 52(51). Scars in midline only (Figs. 203, 280, 285, 289) 54
- Whole venter of epigynum seemingly torn off (Figs. 197, 247) 53
- 53(52). Posterior median plate wider than long (Fig. 248); southern Brazil (Map 3D) *amalla*
- Posterior median plate square (Fig. 198); southern Brazil (Map 3A) *saturnino*
- 54(52). Posterior median plate in a depression (Fig. 286); southern Brazil (Map 3A) *viriosa*
- Posterior median plate otherwise (Figs. 204, 281, 290, 293) 55
- 55(54). Posterior median plate much wider than



Map 4. Distribution of *Metazygia* species.

long (Fig. 290); Mato Grosso, Brazil (Map 3D) *ituari*

- Posterior median plate otherwise (Figs. 204, 281, 293) 56

56(55). Posterior median plate Y-shaped as in Figure 293; Peruvian Amazon (Map 4A) *limonal*

- Posterior median plate otherwise 57

57(56). Epigynum in ventral view with a round, shallow depression on each side as in Figure 280; Amazon area to northern Argentina (Map 3D) *voluptifica*

- Epigynum in ventral view with a raised area on each side as in Figure 203; southeastern Brazil (Map 3B) *crabroniphila*

58(51). Cephalic area of carapace almost as wide as thoracic area; abdomen with longitudinal stripes as in Figure 224; Amazon area (Map 3B) *uma*

- Carapace otherwise 59

59(58). Epigynum in ventral view pentagonal as in Figure 333; Colombian Amazon (Map 4C) *carimagua*

- Epigynum otherwise 60

60(59). Epigynum subtriangular in ventral view with shallow median groove and without distinct lip as in Figures 216 and 226; cephalic region of carapace relatively wide (Figs. 219, 228) 61

- Epigynum otherwise (Figs. 346, 360, 391) 62

61(60). Posterior median plate longer than wide (Fig. 226); Panama to Rio de Janeiro State, Brazil (Map 3F) *laticeps*

- Posterior median plate wider than long (Fig. 217); Ecuador, Peru (Map 3B) *sendero*

62(60). Epigynum in ventral view with posterior margin lobed and median area swollen as in Figures 342 and 351 63

- Epigynum otherwise (Figs. 346, 360, 365, 370) 64

63(62). Epigynum with depression on ventral face (Figs. 351, 354), posterior median plate dumb-bell-shaped (Fig. 352); Venezuela to Peru (Map 4D) *lopez*

- Epigynum swollen on ventral face (Fig. 342), posterior median plate triangular (Fig. 343); Hispaniola (Map 4D) *cienaga*

64(62). In ventral view posterior margin of epigynum with a swollen lip as in Figures 360, 365, 370 and 405 65

- Posterior margin of epigynum without swollen lip (Figs. 346, 385, 409) 68

65(64). Lip a horizontal bar as in Figure 405; posterior median plate T-shaped (Fig. 406); Rio Grande do Sul, Brazil (Map 4F) *valentim*

- Lip V-, U-, or T-shaped (Figs. 360, 365, 370) 66

66(65). Posterior median plate pentagonal (Fig. 371); black amorphous material on each side posteriorly (Figs. 370, 372); Amazon area (Map 4E) *erratica*

- Posterior median plate not pentagonal (Figs. 361, 366); without black amorphous material 67

67(66). Posterior median plate triangular (Fig. 361); Peruvian Amazon (Map 4D) *samtria*

- Posterior median plate square, anterior to it a textured area (Fig. 366); Amazon region, Bolivia (Map 4D) *ducke*

68(64). Posterior margin with a notch in middle and a lobe extending each side as in Figure 346; Amazon area (Map 4D) *souza*

- Posterior margin otherwise, often with a pair of lobes (Figs. 385, 391, 401, 409) 69

69(68). In ventral view a pair of lobes as in Figure 385; posterior median plate dumb-bell-shaped (Fig. 386); Mato Grosso, Brazil (Map 4E) *voxanta*

- Ventral view otherwise (Figs. 391, 401, 409) 70

70(69). A median ventral notch in posterior view of epigynum (at 12 hr in Figs. 402, 410) 71

- No notch visible in posterior view (Figs. 392, 395); Colombia, Ecuador to mouth of Amazon (Map 4F) *peckorum*

71(70). Posterior median plate constricted ventrally (at 12 hr in Fig. 402); Ecuadorian, Peruvian Amazon (Map 4F) *moldira*

- Posterior median plate as in Figure 410; Bahia to São Paulo States, Brazil (Map 4F) *bahia*

KEY TO MALE *METAZYGIA*

1. Cheliceral bases or fangs modified with transparent lobes (Figs. 261, 262, 269, 276) 2

- Cheliceral bases or fangs not modified 4

2(1). Median apophysis (M in Fig. 260), in mesal view short (Figs. 258, 260); Central America, West Indies, South America (Map 3E) *gregalis*

- Median apophysis, in mesal view, longer (Figs. 267, 274) 3

3(2). Median apophysis with a black wall (at 4 hr in Fig. 274, at 6 hr in Fig. 275); Amazon area, São Paulo State, Brazil (Map 3C) *yobena*

- Median apophysis without black wall (Figs. 267, 268); Panama, Colombia (Map 3C) *benella*

4(1). Fourth coxae with a macroseta or pointed tubercle 5

- Fourth coxae without macroseta or tubercle 15

5(4).	Fourth coxae with a tubercle; embolus of palpus thorn-like (Fig. 357, E in Fig. 359); Venezuela, Amazon area (Map 4D)	<i>lopez</i>	
-	Fourth coxae with macroseta	6	
6(5).	Carapace with a lobe above first coxae (Fig. 390)	7	
-	Carapace without lobe above first coxae	13	
7(6).	Abdomen posteriorly black (Fig. 388); Mato Grosso, Brazil (Map 4E)	<i>voxanta</i>	
-	Abdomen posteriorly light	8	
8(7).	In mesal view, median apophysis projecting beyond tegulum (at 3 hr in Fig. 318, at 3 hr in Fig. 423)	9	
-	Median apophysis smaller and not projecting beyond tegulum (Figs. 313, 383, 418, 425)	10	
9(8).	Median apophysis very large, facing cymbium at 3 hr in Figure 423; Bahia, Brazil (Map 4H)	<i>atama</i>	
-	Median apophysis distally rectangular in mesal view at 3 hr in Figure 318; Amazon area (Map 4C)	<i>mariahelena</i>	
10(8).	Embolus S-shaped as seen through transparent lamella (between 11 hr and at center in Fig. 313)	<i>octama</i>	
-	Embolus otherwise, usually hidden (Figs. 383, 418, 425)	11	
11(10).	Median apophysis with bulge on side (at 3 hr in Fig. 425, right of center in Fig. 426); coastal Ecuador (Map 4I)	<i>oro</i>	
-	Median apophysis without bulge (Figs. 383, 418)	12	
12(11).	Median apophysis subtriangular (at 3 hr in Fig. 418); Rio Grande do Sul, Brazil (Map 4H)	<i>cunha</i>	
-	Median apophysis distally enlarged (at 4 hr in Fig. 383); Peruvian Amazon (Map 4E)	<i>genaro</i>	
13(6).	Embolus a thread with a transverse loop as in Figures 112 and 113; Greater Antilles (Map 2I)	<i>crewi</i>	
-	Embolus otherwise (Figs. 327, 332)	14	
14(13).	Median apophysis distally tapering to a point (at 3 hr in Fig. 327); Mexico, Central America (Map 4G)	<i>nigrocincta</i>	
-	Median apophysis distally bulging as in 4 hr in Figure 332; southern Amazon region to Misiones Prov., Argentina (Map 4C)	<i>lagiana</i>	
15(4).	Carapace with small lobe above first coxa (Figs. 376, 415, 421)	16	
-	Carapace without lobe	18	
16(15).	Abdomen with ventral black band as in Figure 377; Peru (Map 4E)	<i>manu</i>	
-	Abdomen marked otherwise	17	
17(16).	Sickle-shaped embolus (Fig. 414); Colombian Amazon (Map 4F)	<i>rothi</i>	
-	Embolus barely visible, hidden by large sclerotized lamella (at 11 hr in Fig. 420); eastern Pará State, Brazil (Map 4I)	<i>aldela</i>	
18(15).	Abdomen with median, transverse light band (Fig. 417); palpus as in Figure 416; Amazon area (Map 4I)	<i>cazeaca</i>	19
-	Abdomen and palpus otherwise	19	
19(18).	Palpus with terminal apophysis (A in Figs. 45, 112; top of Figs. 162, 201, 207)	20	
-	Palpus without terminal apophysis, only a lamella (Figs. 142, 148, 213, 221, 225, 230, 237, 243-246)	38	
20(19).	Terminal apophysis with distal straight or slightly curved prong (Figs. 6, 13)	21	
-	Terminal apophysis with short distal prong (between center and 2 hr in Fig. 91); Mato Grosso, Brazil (Map 2C)	<i>isabelae</i>	
21(20).	In mesal view terminal apophysis with two prongs (between center and 2 hr in Fig. 6); southeastern United States to Costa Rica (Map 2A)	<i>wittfeldae</i>	
-	Terminal apophysis otherwise (Figs. 13, 27)	22	
22(21).	A comb projecting beyond prong in mesal view (at 1 hr in Figs. 20, 27, 66)	23	
-	No comb-like projection (Figs. 13, 201)	25	
23(22).	Comb-like projection longer than wide in mesal view (at 1 hr in Fig. 20); tegulum with pointed spine (at 3 hr in Fig. 21); Costa Rica to Guianas and northern Peru, Galapagos Islands and West Indies (Map 2A)	<i>dubia</i>	
-	Comb-like projection in mesal view wider than long (at 1 hr in Figs. 27, 66); tegulum without pointed spine (Figs. 28, 67)	24	
24(23).	Comb small (at 1 hr in Fig. 66), most of embolus hidden behind conductor (Figs. 66, 67); northern Peruvian Amazon (Map 2B)	<i>pastaza</i>	
-	Comb large (at 1 hr in Fig. 27), most of embolus exposed, only tip of conductor hidden (at 3 hr in Fig. 27); Venezuela to Peruvian coast (Map 2D)	<i>pimentel</i>	
25(22).	A pointed tooth projecting beyond prong of terminal apophysis in mesal view (at 1 hr in Fig. 13, center in Fig. 14); Bahama Islands (Map 2A)	<i>bahama</i>	
-	No such tooth	26	
26(25).	Median apophysis projecting beyond other sclerites toward 4 hr, conductor toward 3 hr with triangular space between these sclerites in mesal view (Figs. 201, 207); southern Brazil	27	
-	Median apophysis and conductor otherwise (Figs. 60, 99, 104, 213)	28	
27(26).	Conductor with a knob at tip (at 3 hr in Fig. 201); median apophysis straight		

- (at 4 hr in Fig. 201); Rio Grande do Sul, Brazil (Map 3A) *saturnino*
- Conductor tapering to tip (at 3 hr in Fig. 207); median apophysis with elbow (at 4 hr in Fig. 207); southeastern Brazil (Map 3B) *crabroniphila*
- 28(26). Tip of embolus with horseshoe-shaped structure (Fig. 104, center of Fig. 105); Guianas, Amazon area (Map 2F) . *jamari*
- Tip of embolus otherwise, or hidden by conductor (Figs. 60, 99, 162) 29
- 29(28). Embolus long, saber-shaped, and curved up (Fig. 99); southeastern Brazil (Map 2C) *rogenhoferi*
- Embolus otherwise (Figs. 73, 119, 162) 30
- 30(29). Embolus U-shaped (with dark cap as in Fig. 119); Guatemala (Map 2I) ____ *carrizal*
- Embolus otherwise 31
- 31(30). Embolus a small hook as in center of Figure 162; western Amazon area (Map 2K) *yucumo*
- Embolus otherwise 32
- 32(31). Embolus almost straight structure, tip hidden by terminal apophysis prong as in Figure 85; Neblina area of Amazon (Map 2E) *enabla*
- Embolus otherwise 33
- 33(32). Embolus thorn-shaped as in Figure 33; Peruvian Amazon to Bahia, Brazil (Map 2D) *patiama*
- Embolus otherwise; Mexico, Central America 34
- 34(33). Embolus lamella (L in Figs. 45, 54) covering most of embolus with one large point and a forked tooth as in Figure 73; Central America (Map 2J) ____ *incerta*
- Embolus lamella otherwise (Figs. 44, 54, 60, 79) 35
- 35(34). Embolus lamella triangular tip covered by blister-like part of terminal apophysis (center in Fig. 60); southern Mexico to Honduras, Jamaica (Map 2B) ... *chicanna*
- Embolus lamella otherwise 36
- 36(35). Embolus lamella rounded as in Figure 44; Florida, Texas to Honduras, Cuba, Jamaica (Map 2G) *zilloides*
- Embolus lamella otherwise 37
- 37(36). Embolus lamella with axis of tip at right angle to axis of cymbium (Fig. 54); embolus without lobes (Fig. 54); Costa Rica to Trinidad and Colombia (Map 2G) *keyserlingi*
- Embolus lamella with tip pointing toward 1 hr in Figure 79; embolus with two lobes below (Figs. 79, 80); Mexico to Guianas and Peru (Map 2E) . *pallidula*
- 38(19). Median apophysis long, thumb-shaped and projecting beyond tegulum (at 3 hr in Figs. 302, 308) 39
- Median apophysis otherwise 40
- 39(38). Embolus lamella projecting beyond cymbium edge as at 11 hr in Figure 308; Amazon area (Map 4B) *castaneoscutata*
- Cymbium edge extending beyond lamella as at 11 hr in Figure 302; Amazon area (Map 4A) *vaupes*
- 40(38). Tegulum with a large fold having a comb (at 12 hr in Figs. 283, 295) 41
- Tegulum otherwise 42
- 41(40). Embolus axis at right angle to axis of cymbium (Fig. 283); Amazon area to southeastern Brazil (Map 3D) *voluptifica*
- Embolus axis forming an acute angle with that of cymbium (Fig. 295); Guyana (Map 4A) *tanica*
- 42(40). Tegulum with a large distal lobe (at 12 hr in Figs. 237, 243) 43
- Tegulum otherwise or only small lobe 44
- 43(42). Lamella with subparallel sides distally concave (at 3 hr in Fig. 243; at 10 hr in Fig. 244, L in Fig. 245); median apophysis with one point (at 5 hr in Fig. 243, M in Fig. 245); Bahia State to Rio Grande do Sul, Brazil (Map 3F) *genialis*
- Lamella distally narrowing (at 3 hr in Fig. 237); median apophysis with two points (at 5 hr in Fig. 237); southeastern Brazil (Map 3F) *mundulella*
- 44(42). Median apophysis "hanging down"; upside-down T-shaped (at 6 hr in Fig. 250); Guianas (Map 3D) *ikuruwa*
- Median apophysis otherwise (Figs. 142, 149, 213, 221, 230) 45
- 45(44). Lower edge of median apophysis semi-circular (at 5 hr in Figs. 213, 230) 46
- Median apophysis otherwise (Figs. 142, 148, 221, 225) 47
- 46(45). Palpus as in Figure 230; Panama to Rio de Janeiro State, Brazil (Map 3F) ____ *laticeps*
- Palpus as in Figure 213; Bolivia to Mato Grosso do Sul (Map 3B) *corumba*
- 47(45). Embolus thread-like curving "above" tegulum (at 12 hr in Fig. 142); Neblina area of Amazon (Map 2H) *arnoi*
- Embolus otherwise (Figs. 148, 221, 225) 48
- 48(47). Median apophysis having a "bottom" bulge and tip hidden by conductor in mesal view (Figs. 148, 149); Amazon area (Map 2H) *curari*
- Median apophysis otherwise (Figs. 221, 225) 49
- 49(48). Median apophysis as in Figure 225; Amazon area (Map 3B) *uma*
- Median apophysis as in Figure 221; Ecuador to Amazonian Peru (Map 3B) . *sendero*

Metazygia wittfeldae (McCook)
 Figures 1–7; Map 2A

Epeira wittfeldae McCook, 1894: 168, pl. 7, figs. 6, 7, ♀, ♂. Three female, two male, and one imm. male syntypes from Florida in ANSP, examined.

Metazygia wittfeldae.—F. P.-Cambridge, 1904: 501, pl. 47, figs. 22, 23, ♀, ♂. Roewer, 1942: 368. Bonnet, 1957: 2820. Levi, 1977: 92, pl. 6, figs. 90–103, ♀, ♂.

Description. Female from Tabasco, Mexico. Carapace orange, cephalic region dark orange. Chelicerae dark orange. Labium, endites, sternum orange. Coxae, legs orange. Dorsum of abdomen with gray pattern on white pigment spots (Fig. 5); venter light orange-gray, without marks. Posterior median eyes 0.5 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.7 diameter apart, 1.3 diameters from laterals. Posterior median eyes 0.2 diameter apart. Height of clypeus equals 0.5 diameter of anterior median eye. Total length 8.0 mm. Carapace 4.2 mm long, 3.1 wide, 1.9 behind lateral eyes. First femur 3.2 mm, patella and tibia 4.1, metatarsus 3.0, tarsus 1.2. Second patella and tibia 3.8 mm, third 2.3, fourth 3.1.

Male from Tabasco, Mexico. Color as in female but cephalic region lighter. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.7 diameter apart, 1 diameter from laterals. Posterior median eyes 0.3 diameter apart, 2.1 diameters from laterals. Height of clypeus equals 0.5 diameter of anterior median eye. Second tibia thicker than first, both first and second with macrosetae. Total length 5.2 mm. Carapace 2.9 mm long, 2.1 wide, 1.1 behind lateral eyes. First femur 2.7 mm, patella and tibia 3.5, metatarsus 3.0, tarsus 1.1. Second patella and tibia 3.1 mm, third 1.7, fourth 2.1.

Note. Males and females are commonly collected together.

Variation. Total length of females 7.2 to 11.1 mm, males 4.2 to 7.2. Illustrations were made from specimens from Tabasco State, Mexico.

Diagnosis. In ventral view the epigyn-

um is twice as wide as long and has posterior swellings on each side (Fig. 2); in related species *M. dubia* (Fig. 16) and *M. bahama* (Fig. 9), it is narrower and lacks these swellings. Males are separated from *M. dubia* and *M. bahama* by the soft prong parallel to the sclerotized prong of the terminal apophysis (at 1 hr in Fig. 6), which is absent in the other two. The distribution of *M. wittfeldae* is allopatric with respect to related species (Map 2A).

Natural History. Specimens were collected under eaves of buildings and in brush and are commonly found in mud-dauber wasp nests.

Distribution. From southeastern United States, Virginia to Costa Rica. Its distribution does not overlap that of *M. bahama* and *M. dubia* (Map 2A). United States and some Mexican records on Map 2 come from Levi (1977).

Specimens Examined. MEXICO *Tamaulipas*: Ciudad Mante (AMNH); Tampico (AMNH). *San Luis Potosí*: Tamazunchale (AMNH, CAS); Valles (AMNH). *Zacatecas*: Tabasco (MCZ). *Nayarit*: Tepic (AMNH); 27 km S Acaponeta (CAS). *Colima*: Santiago, NW Manzanillo (AMNH). *Veracruz*: Acayucan (CAS); Catemaco (AMNH, CAS); 7.5 km W Catemaco; 17 km W Cerro Azul; Córdoba; Fortín de las Flores; Jalapa; La Palma; Lago Catemaco (all AMNH); Mocambo (CAS); Papantla; Tecolutla (all AMNH); Veracruz (AMNH, MCZ); Orizaba (MCZ). *Guerrero*: 13 km W Acapulco (AMNH). *Oaxaca*: Tehuantepec; 3.2 km NE Tehuantepec (all AMNH). *Tabasco*: Villa Hermosa (AMNH). *Yucatan*: Chetumal (MCZ). *Chiapas*: Palenque Ruins (MCZ); Prusia (AMNH). BELIZE *Stann Creek*: Dangriga (MCZ); 80 km S Stann Creek (MCZ); Twin Cays, W of Swamp Dock (USNM). GUATEMALA *Antigua*: Mocá; Suchitepequez; San Julian; Tiquizate; Variedades; Zacapa (all AMNH). HONDURAS *Lancetilla*, nr. E Tela (MCZ). NICARAGUA *Lago Jilóá* (SR). COSTA RICA *Cartago*: Turrialba (MCZ). *Guanacaste*: 4 km NW Cañas (MCZ); nr. Cañas (MCZ). *San José*: San José, common in city (AMNH, MCZ).

Metazygia bahama new species
 Figures 8–14; Map 2A

Holotype. Male holotype, one male, two female paratypes from South Bimini, Bahama Islands, June 1951 (M. A. Cazier), in AMNH. The specific name is a noun in apposition after the type locality.

Description. Female paratype. Carapace orange-brown with sides of thoracic

region orange. Chelicerae red-brown. Labium, endites dark orange. Sternum, coxae, legs orange. Dorsum of abdomen with pairs of black brackets (Fig. 12); venter light gray without marks. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.8 diameter apart, 2 diameters from laterals. Posterior median eyes 0.3 diameter apart, 4 diameters from laterals. Height of clypeus equals 0.8 diameter of anterior median eye. Total length 8.0 mm. Carapace 3.9 mm long, 2.7 wide, 1.7 behind lateral eyes. First femur 2.9 mm, patella and tibia 3.7, metatarsus 2.5, tarsus 1.1. Second patella and tibia 3.4 mm, third 2.1, fourth 2.7.

Male holotype. Color as in female. Posterior median eyes 0.6 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.8 diameter apart, 1 diameter from laterals. Posterior median eyes 0.3 diameter apart, 2.2 diameters from laterals. Height of clypeus equals 0.5 diameter of anterior median eye. Second tibia slightly thicker than first, with stronger macrosetae. Abdomen widest in middle. Total length 5.1 mm. Carapace 2.8 mm long, 2.1 wide, 1.1 behind lateral eyes. First femur 2.8 mm, patella and tibia 3.7, metatarsus 2.8, tarsus 1.1. Second patella and tibia 3.1 mm, third 1.7, fourth 2.2.

Note. Males and females were collected together.

Variation. Total length of females 6.7 to 10.7 mm, males 4.8 to 5.7. Illustrations were made from the male holotype and a female paratype collected with it.

Diagnosis. Epigynum of the female (Fig. 9) is narrower than that of *M. wittfeldae* in ventral view (Fig. 2), and the posterior median plate is wider dorsally (at 6 hr in Fig. 10) than that of *M. dubia* (at 6 hr in

Fig. 17) in posterior view. The male differs from both of these species by having a spine on the subterminal apophysis (at 1 hr in Fig. 13 and center of Fig. 14).

Natural History. This species probably has habits similar to *M. wittfeldae* and *M. dubia*.

Distribution. Bahama Islands. The distribution does not overlap that of *M. dubia* and *M. wittfeldae* (Map 2A).

Paratypes. From type locality: June 1950, 6♀, 1♂, imm. (M. A. Cazier, F. Rindge, AMNH); May 1951, 5♀, 4♂, imm. (M. Cazier, W. J. Gertsch, AMNH); June 1951, 30♀, 1♂, imm. (M. A. Cazier; C., P. Vaurie, AMNH); July 1951, 1♂ (C., P. Vaurie, AMNH).

Specimen Examined. BAHAMA ISLANDS Dog Key, N Andros Island, 13 May 1904, 1♂ (AMNH).

Metazygia dubia (Keyserling)

Plate 1; Figures 15–21; Map 2A

Epeira dubia Keyserling, 1864: 123, pl. 4, figs. 12, 13, ♀. Two female syntypes from Sta. Fé de Bogota, N. Granada [Bogotá, Colombia], in BMNH, examined. Keyserling, 1892: 187, pl. 9, fig. 138, ♀.

Epeira moraballii Hingston, 1932: 363, figs. 53, 54, web. Specimens from the Essquibo River, Guyana, lost [not in BMNH]. NEW SYNONYMY.

Aranea dubia:—Roewer, 1942: 841.

A. moraballii:—Roewer, 1942: 847.

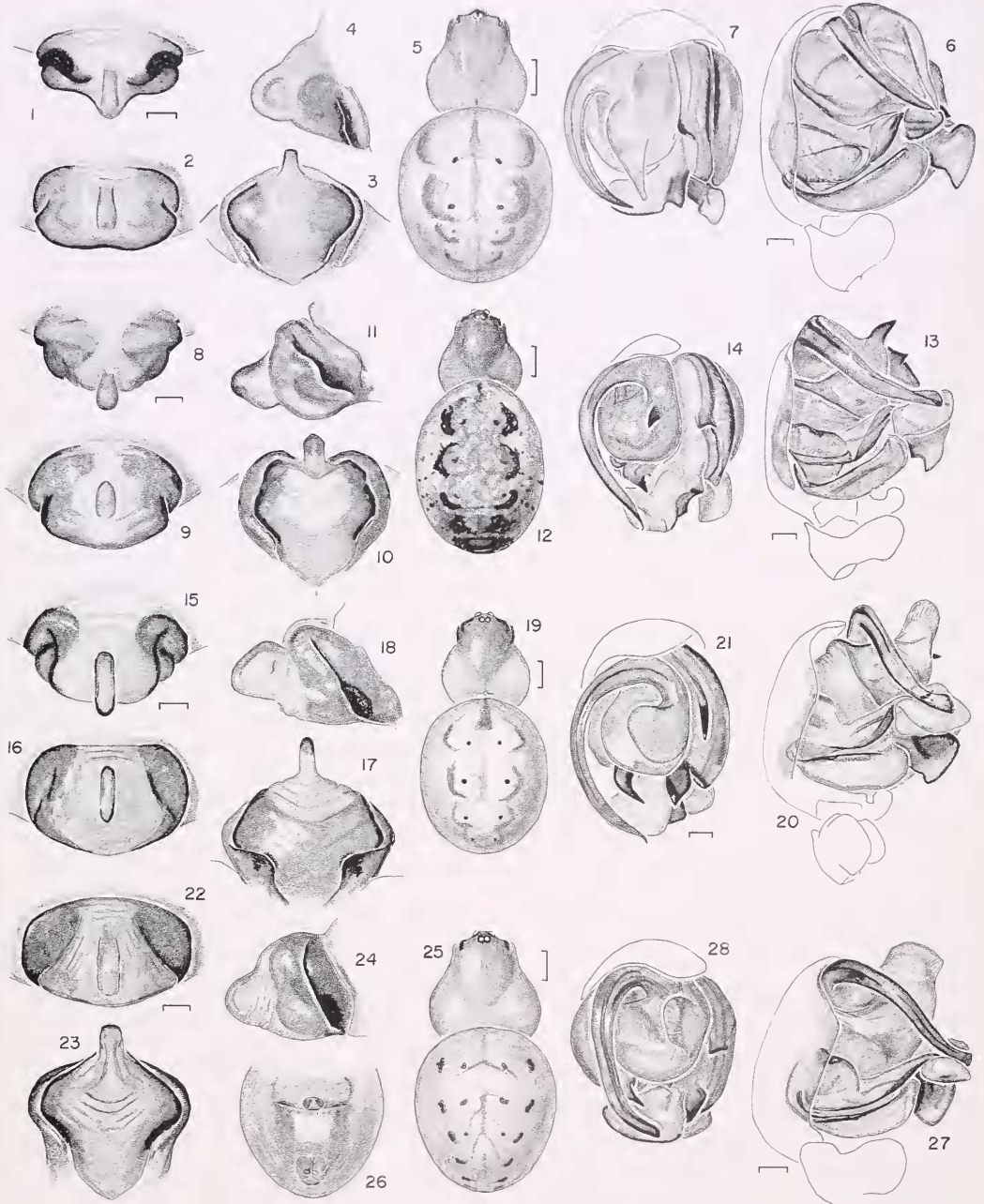
Araneus moraballicus Bonnet, 1955: 546.

Metazygia dubia:—Levi, 1991a: 179.

Synonymy. Hingston's *E. moraballii* is synonymized with *M. dubia* because Hingston described the proximity of the posterior median eyes, the oval abdomen, and the *Zygiella x-notata*-like web. Also, only a few Guianan *Metazygia* are 11 mm total length. (The other large *Metazygia*, *M. laticeps*, has spinnerets anterior of the posterior tip, a fact noticed by Hingston for his *Epeira folisecens*, but not here.)

Figures 1–7. *Metazygia wittfeldae* (McCook). 1–5, female. 1–4, epigynum. 1, anterior. 2, ventral. 3, posterior. 4, lateral. 5, dorsal. 6, 7, left male palpus. 6, mesal. 7, apical.

Figures 8–14. *M. bahama* n. sp. 8–12, female. 8–11, epigynum. 8, anterior. 9, ventral. 10, posterior. 11, lateral. 12, dorsal. 13, 14, male palpus. 13, mesal. 14, apical.



Figures 15–21. *M. dubia* (Keyserling). 15–19, female. 15–18, epigynum. 15, anterior. 16, ventral. 17, posterior. 18, lateral. 19, dorsal. 20, 21, male palpus. 20, mesal. 21, apical.

Figures 22–28. *M. pimentel* n. sp. 22–26, female. 22–24, epigynum. 22, ventral. 23, posterior. 24, lateral. 25, dorsal. 26, abdomen, ventral. 27, 28, male palpus. 27, mesal. 28, apical.

Scale lines. 1.0 mm, genitalia 0.1 mm.

Bonnet (1955: 466) lists the name *Epeira dubia* erroneously as a synonym of *Ara-neus cornutus* [= *Larinioides cornutus* (Clerck 1758)].

Description. Female from Gamboa, Panama. Carapace brown, sides of thoracic region orange. Chelicerae brown. Labium, endites light brown. Sternum orange. Coxae light orange, legs orange. Dorsum of abdomen whitish with gray marks (Fig. 19); venter light gray without marks. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes their diameter apart, two diameters from laterals. Posterior median eyes 0.3 diameter apart. Height of clypeus equals 0.5 diameter of anterior median eye. Total length 9.5 mm. Carapace 4.1 mm long, 2.9 wide, 2.2 behind lateral eyes. First femur 3.4 mm, patella and tibia 4.0, metatarsus 3.0, tarsus 1.2. Second patella and tibia 3.8 mm, third 2.1, fourth 3.3.

Male from Gamboa. Color as in female, but carapace all orange. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes their diameter apart, 1.3 diameters from laterals. Posterior median eyes 0.2 diameter apart. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 6.7 mm. Carapace 3.5 mm long, 2.5 wide, 1.5 behind lateral eyes. First femur 3.5 mm, patella and tibia 4.4, metatarsus 3.7, tarsus 1.4. Second patella and tibia 3.8 mm, third 2.1, fourth 2.7.

Note. Males and females were collected together.

Variation. Total length of females 7.2 to 11.7 mm, males 4.8 to 6.2. The abdomen may have dark marks or sometimes none at all. The scape is torn off the epigynum in some females. The epigynum of a female from Depto. Huila, Colombia, is heavily sclerotized. A male from Venezuela had the tegulum spine short. Illustrations were made from a female and male from Gamboa, Panama; the specimen on Plate 1 is from Negril, Jamaica.

Diagnosis. The *Metazygia dubia* epi-

gynum (Fig. 16) is narrower in ventral view than that of *M. wittfeldae* (Fig. 2) and lacks the swelling on each side. It has a narrower scape (Figs. 16, 17) than that of *M. bahama* (Figs. 9, 10). Males can be separated from the more northern *M. wittfeldae* by the distal comb-like projection of the male terminal apophysis (at 1 hr in Fig. 20, center of Fig. 21) and by the long black spine on the tegulum (at 3 hr in Fig. 21).

Natural History. This species was collected from disturbed areas outside and sometimes inside buildings. It was found under bark in Cuba and was collected from coral just above the high tide mark in Jamaica; from pasture and from dense vegetation in Jamaica; on a wire fence at Coamo, Puerto Rico; and under a roof overhang and on a boat dock on Barro Colorado Island, Panama. Specimens from Galapagos were found in seashore vegetation. The spiders are nocturnal and sit in a silk retreat during the day. There is no signal line to the retreat. The vertical web is rebuilt every evening and has a partly closed hub (Lubin, personal communication). Some specimens come from mud-dauber wasp nests.

Distribution. Costa Rica, West Indies to Brazil and Peru and Galapagos Islands. It does not overlap *M. wittfeldae* (Map 2A).

Specimens Examined. COSTA RICA *Limón:* Limón (DU). PANAMA *Herrera:* Sarigua (MIUP). *Coclé:* Río Hato (MIUP). *Colón:* Santa Rosa (AMNH). *Panamá:* very common (AMNH, MIUP, MCZ). CUBA *Archip. Canarreos:* Cayo Cantiles, Bajo Corteza (IESC); Cayo Rosario, Bajo Corteza (IESC); Cayo Avalos (MNHNC). JAMAICA very common (AMNH, MCZ). HISPANIOLA *Dominican Republic: Sanaña:* Las Terrenas (MNSD). *Independencia:* Baño de Zorsa (MNHNC); betw. Neiba and Duvergé (MNSD). *Distrito Nacional:* Acuario Nacional, Santo Domingo (MNSD). PUERTO RICO Laguna Cartagena, 10 km SW Lajas (MCZ); Baños de Coamo (MCZ). CURAÇAO Hato (AMNH). VENEZUELA *Sucra:* Cumaná (MCN). *Monagas:* Caripito (AMNH). *Bolívar:* Canaima [?Canaimé] (AD). COLOMBIA *Magdalena:* Ciénaga (IBNP); Pozo Colorado, 11 km W Santa Marta (AMNH); San Pablo (IBNP). *Atlántico:* Barranquilla (AMNH, IBNP). *Antioquia:* Mutatá (MCZ). *Huila:* 10 km E Santa Leticia, Finca Meremberg, 2,300 m (MCZ). ECUADOR *Sucumbíos:* Cuyabeno

Reserv. (MCZ). *Pastaza*: Río Pastaza, Río Verde, Mara Trail, 1,200 m (AMNH). *Guayas*: 3 km NE La Libertad (CAS). *Galapagos Isl.*: W coast Albemarle Isl. (AMNH); Bahia Borrero, Santa Cruz (MCZ). PERU *Libertad*: Pacasmayo (PAN); Guadalupe (PAN). BRAZIL *Amazonas*: Rio Autás, Sta. Amélia (NRMS). *Ceará*: Pacajus Guarani, 3 July 1972, 2♂ (Exped. Acad. Bras. Cienc., MZSP 12408).

Metazygia pimentel new species

Figures 22–28; Map 2D

Holotype. Male holotype and four female paratypes from Pimentel, Depto. Lambayeque, Peru, 21 Sept. 1988 (D. Silva D.), in MUSM; one paratype in MCZ. The specific name is a noun in apposition after the type locality.

Description. Female paratype. Carapace orange, darkest in eye region. Chelicerae dark orange-brown. Labium, endites, sternum light orange. Coxae light orange, legs orange. Dorsum of abdomen whitish with five pairs of black spots (Fig. 25); venter with indistinct white patch surrounded by dusky area (Fig. 26). Posterior median eyes 0.8 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.8 diameter apart, 2.2 diameters from laterals. Posterior median eyes 0.2 diameter apart. Height of clypeus equals 0.7 diameter of anterior median eye. Total length 8.2 mm. Carapace 4.5 mm long, 3.4 wide, 2.1 behind lateral eyes. First femur 3.4 mm, patella and tibia 4.1, metatarsus 2.7, tarsus 1.2. Second patella and tibia 3.8 mm, third 2.5, fourth 3.4.

Male holotype. Color as in female but white patch in dusky area on venter of abdomen is more distinct. Posterior median eyes 0.7 diameter of anterior medians, anterior laterals 0.7 diameter, posterior laterals 0.6. Anterior median eyes 0.4 diameter apart, 1.2 diameters from laterals. Posterior median eyes 0.2 diameter apart. Height of clypeus equals 0.3 diameter of anterior median eye. Total length 5.7 mm. Carapace 3.1 mm long, 2.4 wide, 1.4 behind lateral eyes. First femur 2.9 mm, patella and tibia 3.7, metatarsus 2.7, tarsus 1.2. Second patella and tibia 3.0 mm, third 1.9, fourth 2.3.

Note. Males and females were collected together.

Variation. Total length of males 5.7 to 6.3. Illustrations were made from the type specimens.

Diagnosis. The median, less sclerotized triangular area of the epigynum is more pointed (Fig. 22) than that of *M. dubia* (Fig. 16). The male has a comb-like projection of the subterminal apophysis (at 1 hr in Fig. 27) but lacks the spine on the tegulum that is present in *M. dubia* (at 3 hr in Fig. 21). The venter of the abdomen has a white patch (Fig. 26) absent in similar species.

Natural History. Specimens were abundant in branches of locust "algarrobos," *Prosopis*, a leguminous tree growing in sand dunes in Peru, and dry to very dry tropical forest in Venezuela.

Distribution. Venezuela, Peru in arid areas (Map 2D).

Specimen Examined. VENEZUELA *Falcón*: Paraguana Peninsula, 6 km W Nuevo Pueblo, 26 Nov.–4 Dec. 1960, 1♂ (A. L. Markezich, MCZ).

Metazygia patiana new species

Figures 29–34; Map 2D

Holotype. Female holotype from Fazenda Matiapá, Camacan, Bahia, Brazil, 16 Oct. 1978 (J. S. Santos), in MCN no. 11116; male paratype, same locality and collector, 14 Oct. 1978, in MCN no. 10182. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace orange. Chelicerae orange-brown. Labium, endites dark orange. Sternum orange. Coxae light orange; legs dark orange, distal parts of articles darker. Dorsum of abdomen setose, with anterior pair of dark patches on dusky white and posterior quarter dark gray (Fig. 32). Venter black, fading toward sides. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.5 diameter apart, 1.2 diameters from laterals. Posterior median eyes 0.2 diameter apart, 2.4 diameters from laterals. Height of clypeus equals 0.6 diameter of anterior median eye. Total length 5.6 mm. Carapace 2.8 mm long, 2.2 wide, 1.4 behind lateral eyes. First femur 2.5 mm, patella

and tibia 2.7, metatarsus 1.9, tarsus 0.9. Second patella and tibia 2.6 mm, third 1.6, fourth 2.3.

Male paratype. Color light orange, except for abdomen, which has tiny white pigment spots dorsally and lacks all gray or black marks. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.8 diameter apart, 0.8 diameters from laterals. Posterior median eyes 0.2 diameter apart, 1.3 diameters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 4.4 mm. Carapace 2.3 mm long, 1.6 wide, 0.8 behind lateral eyes. First femur 2.1 mm, patella and tibia 2.5, metatarsus 1.7, tarsus 0.7. Second patella and tibia 2.3 mm, third 1.3, fourth 1.6.

Note. Males and females were collected at the same locality.

Variation. Total length of females 5.6 to 5.7 mm. Illustrations were made from the type specimens.

Diagnosis. The epigynum (Fig. 29) is wider than that of *M. pimentel* in ventral view (Fig. 22), and in posterior view (Fig. 30) the lateral plates appear wider than those of *M. pimentel* (Fig. 23) and *M. dubia* (Fig. 17). The male palpus (Figs. 33, 34) lacks the comb-like projection of the terminal or subterminal apophysis found in *M. dubia* (at 1 hr in Fig. 20) and *M. pimentel* (at 1 hr in Fig. 28) and also lacks the spine on the tegulum. The pattern on the abdomen (Fig. 32) is not a complete folium as in related species.

Natural History. Specimens were collected at night in Peru.

Distribution. Amazon region of Peru to Bahia State, Brazil (Map 2D).

Specimen Examined. PERU *Madre de Dios:* Zona Reservada de Manu, Puesto de Vigilancia Pakitza, 6 Oct. 1987, 1♀ (D. Silva D., J. Coddington, USNM).

Metazygia ipago new species

Figures 35–38; Map 2D

Holotype. Female holotype from Igarapeçu, igapó capim fluante (periodically flooded forest), Est. Pernambuco, Brazil, 12 July 1980, in MNRJ. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace orange, cephalic region dark orange. Chelicerae dark orange. Labium, endites dark orange. Sternum orange. Coxae light orange, legs orange. Dorsum of abdomen with a faint gray folium on white (Fig. 38); venter with some white pigment spots on light gray behind epigynum. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.6 diameter apart, 1.2 diameters from laterals. Posterior median eyes 0.3 diameter apart. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 6.8 mm. Carapace 3.4 mm long, 2.7 wide, 1.5 behind lateral eyes. First femur 3.1 mm, patella and tibia 4.0, metatarsus 2.7, tarsus 1.1. Second patella and tibia 3.5 mm, third 1.9, fourth 2.7.

Diagnosis. In ventral view there is a groove to each side of the median area of the epigynum (Fig. 35). The groove is absent in the epigynum of *M. patiana* (Fig. 29) and similar species.

Metazygia zilloides (Banks)

Figures 39–47; Map 2G

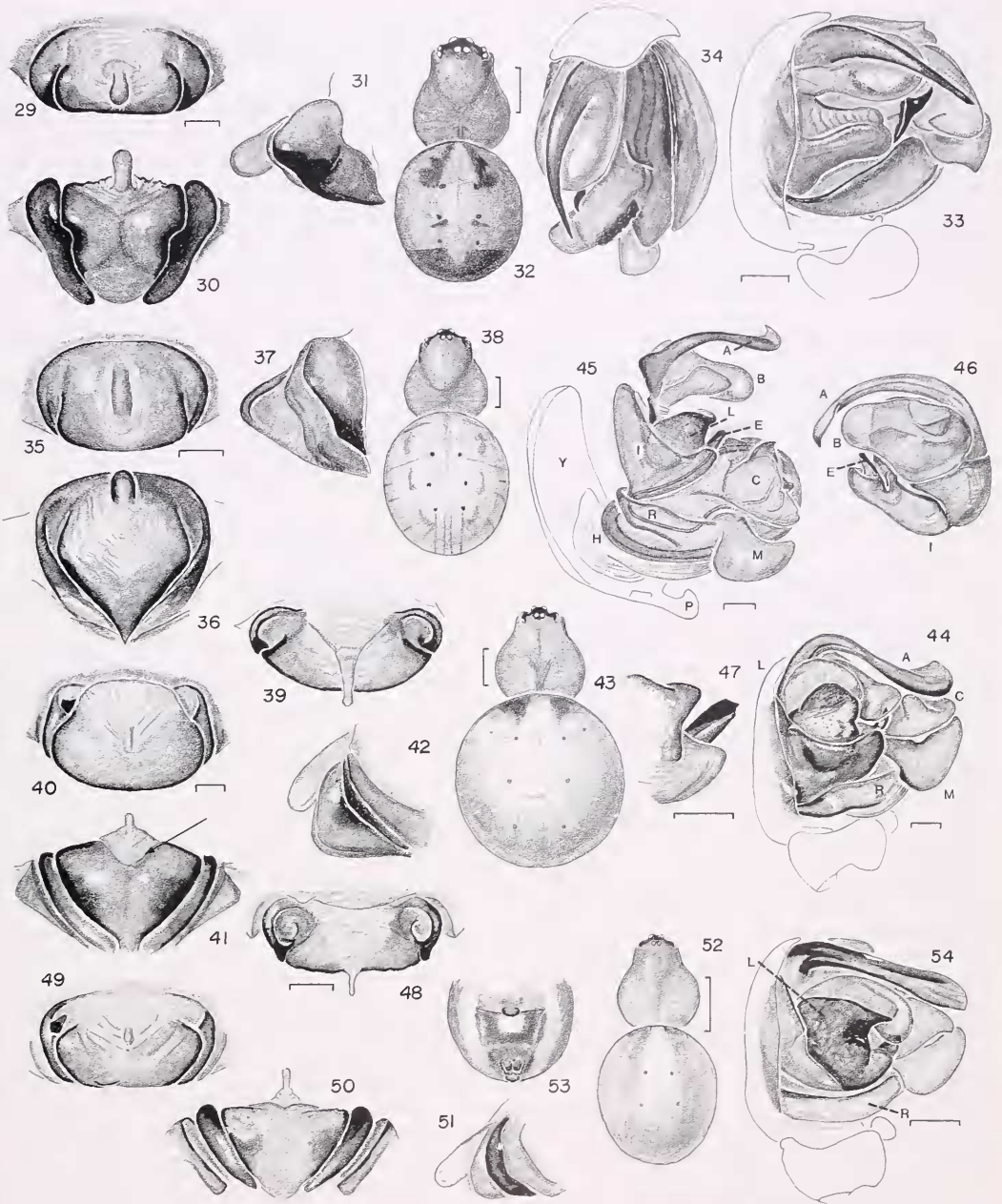
Epeira zilloides Banks, 1898: 255, pl. 15, fig. 2, ♀, ♂.

Three female, one male, and one juvenile syntype from Tepic, Nayarit, Mexico, in MCZ, examined. *Aranea dilatata* F. P.-Cambridge, 1904: 513, pl. 49,

Figures 29–34. *Metazygia patiana* n. sp. 29–32, female. 29–31, epigynum. 29, ventral. 30, posterior. 31, lateral. 32, dorsal. 33, 34, left male palpus. 33, mesal. 34, apical.

Figures 35–38. *M. ipago* n. sp., female. 35–37, epigynum. 35, ventral. 36, posterior. 37, lateral. 38, dorsal.

Figures 39–47. *M. zilloides* (Banks). 39–43, female. 39–42, epigynum. 39, anterior. 40, ventral. 41, posterior. 42, lateral. 43, dorsal. 44–46, male palpus. 44, mesal. 45–47, pulled apart. 45, mesal. 46, dorsal, cymbium removed. 47, embolus and lamella.



Figures 48–54. *M. keyserlingi* Banks. 48–53, female. 48–51, epigynum. 48, anterior. 49, ventral. 50, posterior. 51, lateral. 52, dorsal. 53, abdomen, ventral. 54, male palpus, mesal.

Abbreviations. A, terminal apophysis; B, blister-like subterminal apophysis; C, conductor; E, embolus; H, hematodocha; I, stipes; L, embolus lamella; M, median apophysis; P, paracymbium; R, radix; Y, cymbium.

Scale lines. 1.0 mm, genitalia 0.1 mm.

fig. 9, ♂. Male lectotype designated Levi, 1977: 92 from Guatemala, in BMNH, examined. Roewer, 1942: 841. Synonymized by Levi, 1977.

Metazygia albonigra.—Bryant, 1940: 339, figs. 107–109, 111, ♀, ♂. Erroneous determination, not *Larinia albonigra* Franganillo.

Aranea ziloides.—Roewer, 1942: 857.

Araneus pallidulus.—Kraus, 1955: 24, fig. 66, ♀. Erroneous determination.

Araneus dilatatus.—Bonnet, 1955: 497.

Aranea ziloides.—Bonnet, 1955: 632.

Metazygia ziloides.—Levi, 1977: 92.

Description. Nontype female from Tepic, Nayarit, Mexico. Carapace orange, dusky in midline. Chelicerae, labium orange-brown. Endites, sternum orange, sides darker. Coxae, legs orange, distal ends of femora and tibiae darker. Dorsum of abdomen with white pigment spots and anterior black marks (Fig. 43); venter with white pigment spots. Eyes subequal. Anterior median eyes 0.8 diameter apart, 1.2 diameters from laterals. Posterior median eyes 0.3 diameter apart, 2 diameters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 7.4 mm. Carapace 3.0 mm long, 2.6 wide, 1.3 behind lateral eyes. First femur 3.6 mm, patella and tibia 4.6, metatarsus 3.1, tarsus 1.1. Second patella and tibia 3.7 mm, third 2.1, fourth 3.0.

Male from Tepic, Mexico. Color as in female, but abdomen darker with posterior transverse bars, and venter with a transverse white patch behind genital groove, which is surrounded by black. Posterior median eyes same diameter as anterior medians, laterals 0.9 diameter. Anterior median eyes 0.9 diameter apart, 1 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1.8 diameters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 4.8 mm. Carapace 2.6 mm long, 2.1 wide, 1.0 behind lateral eyes. First femur 3.2 mm, patella and tibia 4.5, metatarsus 3.6, tarsus 1.1. Second patella and tibia 3.4 mm, third 1.7, fourth 2.4.

Note. Males and females were collected together.

Variation. Total length of females 3.8

to 6.7 mm, males 3.0 to 5.0. Illustrations were made from nontype specimens from Tepic, Mexico.

Diagnosis. Females are difficult to separate from *M. keyserlingi*. The embolus part stuck in the opening is smaller (Fig. 40), and there is a median ventral groove in posterior view of the epigynum (arrow in Fig. 41). The male differs from that of *M. keyserlingi* (Fig. 54) by the round shape of the embolus lamella (L in Fig. 44).

Natural History. Specimens were collected in second-growth forest edge in Mexico and from beach grape, in a hotel, and in a citrus orchard and pasture in Jamaica. Others came from a *Sceliphron* wasp nest in Jamaica.

Distribution. Florida, central Texas to Honduras, Bahamas, Cuba, Cayman Islands, and Jamaica (Map 2G). United States and some Mexican records of Map 2 come from Levi (1977).

Specimens Examined. MEXICO *Tamaulipas*: Límón (AMNH); Mante (AMNH). *Nuevo León*: Linares (AMNH); Los Cristales (AMNH). *San Luis Potosí*: Tamazunchale (AMNH); Valles (AMNH). *Nayarit*: 3 km N Compostela (AMNH); Tepic (AMNH). *Jalisco*: Chapala (CAS); Puerto Vallarta (AMNH); Tizapán (AMNH). *Veracruz*: Catemaco (AMNH); Lago Catemaco (AMNH); Río Blanco (MCZ); 4 km N Sontecomapan (REL); Veracruz (USNM). *Hidalgo*: Ixmiquilpan, Río Tula (AMNH). *Distrito Federal*: (AMNH). *Michoacan*: Jiquilpan (AMNH); Lago Chapala (AMNH); Ciudad Michoacan (AMNH). *Morelos*: Cuernavaca (AMNH, MCZ); Tehuixtla (AMNH). *Oaxaca*: Temascal (MCZ); Toluca (AMNH). *Tabasco*: 3 km NE Comalcalco (AMNH); Villa Hermosa (AMNH). *Campeche*: Ciudad del Carmen (AMNH). *Yucatan*: Chetumal (MCZ); Chicxulub (CAS). *Chiapas*: N Arriaga Mtns. (AMNH); Cacahuatán (AMNH); 24 km SW Cintalapa (AD); 45 km SE Comitán (AMNH); Las Cruces (AMNH); Mapastepec (AMNH); Prusia (AMNH); Tonalá (AMNH). GUATEMALA *Guatemala*: Amatitlán (AMNH). *Quiché*: Chichicastenango (AMNH). *Sacatepéquez*: Antigua (AMNH); Capetillo, 1,500 m (AMNH). *Suchitepéquez*: Mocá (AMNH); Nebaj (AMNH); San Julian (AMNH); Variedades, 300 m (AMNH). *Chimaltenango*: Yepocapa (AMNH); San Pedro (AMNH). EL SALVADOR *Candelaria* (AMNH). HONDURAS *Copán* (AMNH); 27 km S Tegucigalpa (MCZ). BAHAMA ISLANDS *Andros Island*: Coakley Town (AMNH). CUBA *Pinar del Río*: Cabañas (AMNH); S Pinar del Río (AMNH); San Vicente (AMNH). *La Habana*: Habana (MCZ, USNM). *Matanzas*: Ciénaga de Zapata (MCZ); Matanzas (AMNH). *Villa Clara*: Vega Alta (MCZ). *Cien-*

fuegos: Soledad (MCZ); Trinidad Mtns., Mina Carlota (MCZ); Topes de Collantes (AMNH). *Camagüey*: Agramonte (AMNH); San Blas (MCZ). *Holguin*: Banes (AMNH); Valle de Maybe (MNHNC). *Santiago*: Siboney (AMNH); Santiago (AMNH); coast below Pico Turquino (MCZ). CAYMAN ISLANDS Grand Cayman (MCZ). JAMAICA Christiana (AMNH); Claremont (MCZ); Evanton (MCZ); Fort Henderson (AMNH); Hope Gardens (AMNH); Kingston (MCZ); Long Mtn. (MCZ); Lucea (AMNH); Mandreville (AMNH); Mona (MCZ); Negril (MCZ); Old Harbour (MCZ); Port Henderson (MCZ); 1 km E Reading (MCZ); Spanish Town (MCZ).

Metazygia keyserlingi Banks

Plate 1; Figures 48–54; Map 2G

Metazygia keyserlingi Banks, 1929: 94, pl. 4, fig. 63, ♀. Five female syntypes from Barro Colorado Island, Canal Zone [Lago Gatún, Panamá Prov., Panama], in MCZ, examined. Roewer, 1942: 868. Bonnet, 1957: 2820.

Synonymy. Banks designated two vials with females as types, two females collected on 20–24 June and three females on 13 July (both without year). This species had been erroneously synonymized with *M. zilloides* (Levi, 1977). When describing *M. keyserlingi*, Banks compared it to *M. pallidula* but not to his own *M. zilloides*, which is more similar to *M. keyserlingi* than is *M. pallidula*.

Description. Female from Barro Colorado Island. Carapace orange. Chelicerae, labium, endites orange. Sternum orange. Legs orange. Dorsum of abdomen whitish with two indistinct black longitudinal bands (Fig. 52). Venter with some white pigment behind epigynum, dark dusky on each side between epigynum and spinnerets, and with a faint white line on each side (Fig. 53). Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes 0.8 diameter apart, 1 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.3 diameters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 4.5 mm. Carapace 1.9 mm long, 1.5 wide, 0.9 behind lateral eyes. First femur 2.1 mm, patella and tibia 2.5, metatarsus 1.7, tarsus 0.7. Second patella and tibia 1.9 mm, third 1.1, fourth 1.7.

Male from Barro Colorado Island. Color as in female. Eyes subequal. Anterior median eyes 1.2 diameters apart, 1 diameter from laterals. Posterior median eyes 0.5 diameter apart. Height of clypeus equals 0.6 diameter of anterior median eye. Total length 3.6 mm. Carapace 1.8 mm long, 1.3 wide, 0.7 behind lateral eyes. First femur 2.0 mm, patella and tibia 2.5, metatarsus 2.0, tarsus 0.8. Second patella and tibia 2.0 mm, third 1.0, fourth 1.4.

Note. Males and females were collected together.

Variation. Total length of females 3.5 to 5.7 mm, males 2.3 to 3.6. Illustrations were made from specimens collected from the type locality: Barro Colorado Island, Gatún Lake, Panama. The web photograph (Pl. 1) is also from Barro Colorado Island, Panama.

Diagnosis. The white patch on the venter of the abdomen (Fig. 53) is more discrete and the groove present in *M. zilloides* (arrow in Fig. 41) is smaller or absent (Fig. 50). The male can be told from *M. zilloides* (Fig. 44) by the embolus lamella (L in Fig. 54), which is pointed “above” the embolus. The females are difficult to separate from *M. zilloides*, but all the ones collected with males had the central swollen part of the epigynum 0.32 mm wide, whereas those of *M. zilloides* had the swollen part of the epigynum 0.40 mm wide. The epigynum of *M. keyserlingi* has a slightly smaller scape than that of *M. zilloides*.

Natural History. This species was collected in moist tropical forest in Costa Rica, in leaf litter in Panama, and in a garden in Cali, Colombia. Males are uncommon in collections.

Distribution. Costa Rica to southern Colombia, Trinidad (Map 2G).

Specimens Examined. COSTA RICA *Limón*: Cahuita, 31 Mar. 1979, 2♀ (J. Coddington, MCZ). *Puntarenas*: Osa, Parque Nacional Corcovado, 15 Aug. 1978, 1♀ (J. Coddington, MCZ); Manuel Antonio National Park, 24–26 Mar. 1983, 2♀, 1♂ (D. Ubick, DU); Osa Peninsula, Llorona Station, 6 Aug. 1980, 1♀ (J. Coddington, USNM). PANAMA *Colón*: Fort Sherman, Aug. 1939, 1♀ (A. M. Chickering, MCZ); Fort Gulick, 23 Feb. 1980, 1♂ (Harlan, AMNH). *Panamá*:

Barro Colorado Island, Lago Gatún, very common, 1♀, 1♂ (AMNH, MCZ); Pipeline Road, Soberania Natl. Park, June 1978, 5♀ (F. Vollrath, MCZ), 7 Aug. 1983, 1♀ (H., L. Levi, MCZ); Toboga Island, 23 Aug. 1946, 2♀ (N. L. H. Krauss, AMNH). TRINIDAD *St. George Co.*: Simla, 6.4 km N Arima, 2 May 1967, 1♀ (C. T. Collins, AMNH); Arima Valley, 10–22 Feb. 1964, 1♂ (P. Wygodzinsky, AMNH). COLOMBIA *Valle*: Cali, 19 Oct. 1969, 1♀, 2 Oct. 1969, 1♀; Río Jamundi, 1,000 m, 18 km S Cali, 9 July 1969, 1♀, 14 Jan. 1970, 1♀, 17 June 1970 (all W. Eberhard, MCZ); 4 Mar. 1973, 3♀ (W. Eberhard, H. Levi, MCZ); 10 km N Piendamó, 1,700 m, Feb. 1974, 1♀, 1♂ (W. Eberhard, MCZ). *Nariño*: nr. Barbacoas, 20 m, 20 Mar. 1974, 1♀ (W. Eberhard 727, MCZ).

Metazygia chicanna new species

Plate 1; Figures 55–61; Map 2B

Holotype. Female holotype and female and two male paratypes from Chicanna Ruins, 8 km W Xpujii, ca. 18°32'N, 89°31'W, Campeche, Mexico, 12–14 July 1983 (W. Maddison), in MCZ. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange, with median dusky band. Chelicerae, labium, endites, sternum orange. Coxae, legs orange. Dorsum of abdomen with two pairs of black bands, sides black (Fig. 58); venter with a central white patch (Fig. 59). Posterior median eyes 0.8 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.8 diameter apart, 1 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1.6 diameters from laterals. Height of clypeus equals 0.6 diameter of the anterior median eyes. Total length 5.5 mm. Carapace 2.2 mm long, 1.5 wide, 0.8 behind lateral eyes. First femur 2.1 mm, patella and tibia 2.7, metatarsus 1.8, tarsus 0.7. Second patella and tibia 2.3 mm, third 1.3, fourth 1.9.

Male paratype. Color as in female, but legs indistinctly ringed darker, and abdomen with two pairs of longitudinal bands. Posterior median eyes 0.9 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.9 diameter apart, 0.8 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1.8 diameters from laterals. Height of clypeus equals 0.6 diameter of anterior median eye. Total length 3.5 mm. Carapace 1.9 mm long, 1.4 wide, 0.7 behind lateral eyes. First femur 2.1 mm, patella and tibia 2.6, metatarsus 2.1, tarsus 0.9. Second patella and tibia 2.1 mm, third 1.1, fourth 1.6.

Note. Males and females were collected together.

Variation. Total length of females 2.5 to 5.8 mm, males 2.5 to 4.2. Illustrations were made from paratypes; the photograph (Pl. 1) was made in Negril, Jamaica.

Diagnosis. All specimens have a white spot on the venter of the abdomen (Fig. 59). Females can be distinguished by the ventral view of the epigynum, which has a cone-shaped scape with openings on each side (Fig. 55). The scape also has a kink in lateral view (Fig. 57). Unlike other species, the male has a cone-shaped embolus lamella (at center of Fig. 60).

Natural History. The holotype came from short tropical rain forest. Other specimens came from moist forest border in Quintana Roo, Mexico, border of forest road; from roadside, on top of woody shrubs without leaves; and from beach grape in Jamaica.

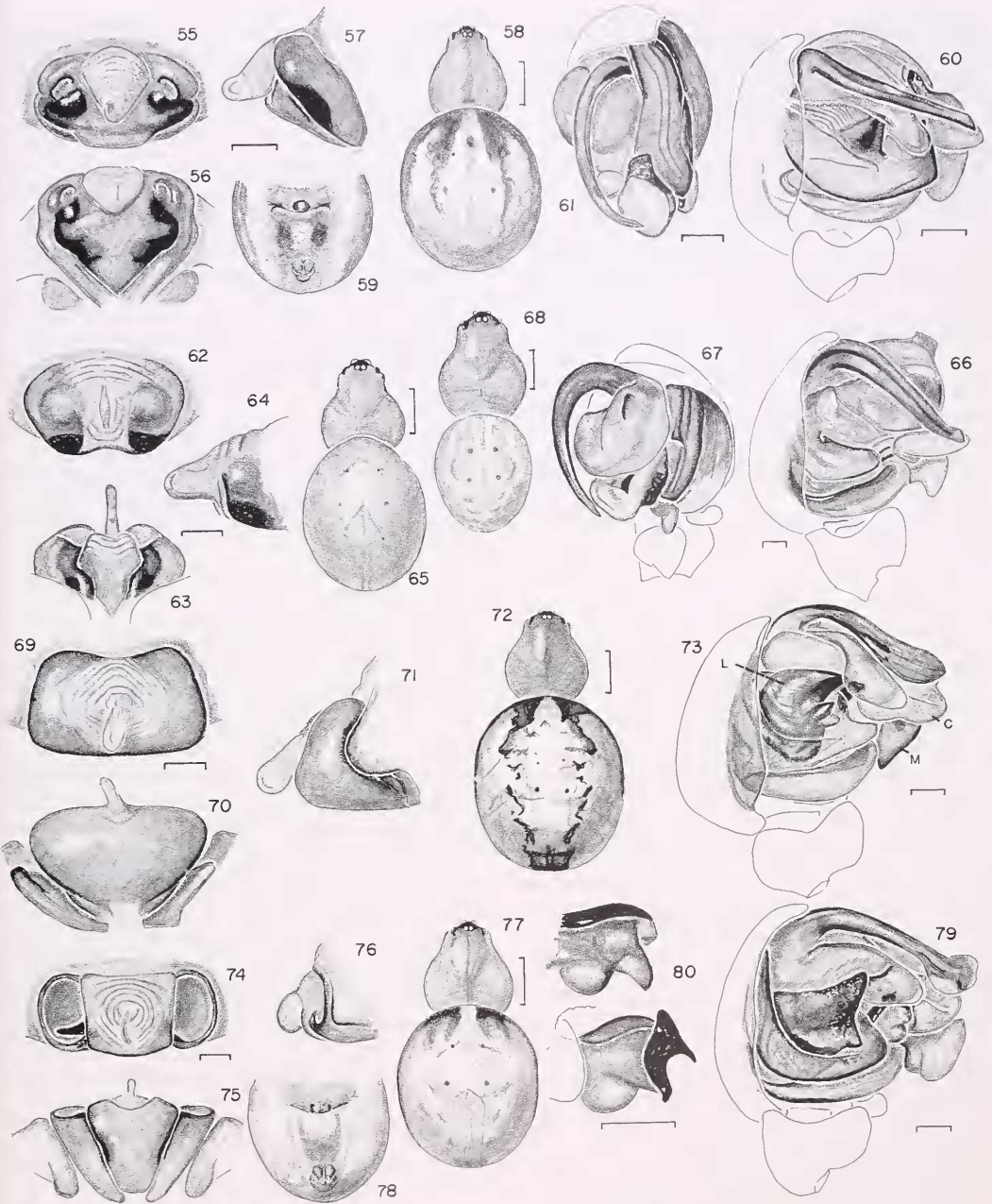
Distribution. From Yucatan Peninsula, Mexico, to Honduras, Jamaica (Map 2B).

Figures 55–61. *Metazygia chicanna* n. sp. 55–59, female. 55–57, epigynum. 55, ventral. 56, posterior. 57, lateral. 58, dorsal. 59, abdomen, ventral. 60, 61, left male palpus. 60, mesal. 61, apical.

Figures 62–65. *M. tapa* n. sp., female. 62–64, epigynum. 62, ventral. 63, posterior. 64, lateral. 65, dorsal.

Figures 66–68. *M. pastaza* n. sp., male. 66, 67, male palpus. 66, mesal. 67, apical. 68, dorsal.

Figures 69–73. *M. incerta* (O. P.-Cambridge). 69–72, female. 69–71, epigynum. 69, ventral. 70, posterior. 71, lateral. 72, dorsal. 73, male palpus.



Figures 74–80. *M. pallidula* (Keyserling). 74–78, female. 74–76, epigynum. 74, ventral. 75, posterior. 76, lateral. 77, dorsal. 78, abdomen, ventral. 79, male palpus. 80, embolus, with and without cap.

Abbreviations. C, conductor; L, embolus lamella; M, median apophysis.

Scale lines. 1.0 mm, genitalia 0.1 mm.

Specimens Examined. MEXICO *Campeche*: Beccan, 18°33'N, 89°30'W, 31 July 1991, 1♂ (W. Piel, G. S. Bodner, MCZ); Ceiba Playa [?], 2 Aug. 1949, 1♀ (C. J. Goodnight, AMNH). *Yucatan*: Chichen Itza, Nov. 1945, 1♀ (H. Wagner, AMNH). *Quintana Roo*: Chetumal, 28 June 1975, 1♂ (W. C. Sedgwick, MCZ); Chancanah Cozumel, 8 Aug. 1949, 1♀ (C. J. Goodnight, AMNH); Reserva de Sian Ka'an, km 5, 4 June 1991, many ♀, 1♂ (G. Alayón, L. F. Armas (IESC); 31 km NE Felipe Carrillo Puerto, Highway 307, 17 July 1983, 1♀ (W. Maddison, R. S. Anderson, MCZ); X-Can, 6–7 June 1959, 1♀ (C., P. Vaurie, AMNH). BELIZE *Stann Distr.*: W Possum Point Biol. Sta., 16°49'N, 88°20'W, 2 July 1991, 1♀ (W. H. Piel, G. S. Bodner, MCZ). HONDURAS *Lancetilla nr. Tela*, July 1929, 1♀; Tela beach 26 July 1929, 1♂ (A. M. Chickering, MCZ). JAMAICA 4.8 km E May Pen, 22 Nov. 1957, 1♀ (A. M. Chickering, MCZ); Kingston, 6 Dec. 1954, 1♂ (A. M. Nadler, AMNH); Kinloss, 23 Mar. 1955, 1♀ (A. M. Nadler, AMNH); 22 km E Kingston, 11 July 1960, 1♀ (C., P. Vaurie, AMNH); Long Mtn., 22 Oct. 1957, 1♂, 26 Oct., 1♂ (A. M. Chickering, MCZ), 11 July 1960, 1♀ (C., P. Vaurie, AMNH); Negril, 23–31 Mar. 1981, 10♀, 4♂ (H., L. Levi, MCZ).

Metazygia tapa new species

Figures 62–65; Map 2B

Holotype. Female holotype and two female paratypes from Zona Reservada Tambopata, 290 m, 12°50'S, 69°17'W, hotel at night, Depto. Madre de Dios, Peru, 8 June 1988 (D. Silva D.), in MUSM, one paratype in MCZ. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace orange. Chelicerae orange, distally brown. Labium, endites, sternum, legs orange. Abdomen whitish with white pigment spots underneath exoskeleton (Fig. 65). Posterior median eyes 0.7 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.5 diameter apart, 0.7 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.8 diameters from laterals. Height of clypeus equals 0.5 diameter of anterior median eye. Total length 5.4 mm. Carapace 2.3 mm long, 1.9 wide, 1.0 behind lateral eyes. First femur 2.3 mm, patella and tibia 2.5, metatarsus 1.6, tarsus 0.8. Second patella and tibia 2.1 mm, third 1.5, fourth 2.0.

Variation. Total length of females 4.9 to 6.0 mm. Illustrations were made from the holotype.

Diagnosis. The abdomen is oval and

slightly pointed anteriorly, widest in middle (Fig. 65). *Metazygia tapa* is separated from *M. ipago* and *M. patiana* by the dark patches in ventral view of the epigynum (Fig. 62) and the narrow posterior median plate (Fig. 63).

Natural History. Specimens were collected by fogging at night in Depto. Loreto, Peru.

Distribution. Amazon drainage, Peru (Map 2B).

Paratype. PERU *Madre de Dios*: Zona Reservada Tambopata, 290 m, 12°50'S, 69°17'W, 3 June 1988, 1♀ (J. Coddington, USNM).

Specimens Examined. PERU *Loreto*: Río Samiria, 12–28 May 1990, 2♀ (T. Erwin, D. Silva D., MUSM). *Madre de Dios*: 15 km E Puerto Maldonado, 200 m, 12°33'S, 69°03'W, 21 Feb.–8 Mar. 1989, 5♀ (D. Silva D., MUSM).

Metazygia pastaza new species

Figures 66–68; Map 2B

Holotype. Male holotype from Pastaza, Depto. Loreto, Prov. Alto Amazonas, Peru, swamp plants, Aug. 1973 (J. C. Olin), in MCZ. The specific name is a noun in apposition after the type locality.

Description. Male holotype. Carapace orange, cephalic region darker orange. Chelicerae orange-brown. Labium, endites dark orange. Sternum orange. Coxae, legs orange. Dorsum of abdomen with folium as in related species (Fig. 68); venter with scattered white pigment spots. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.6 diameter apart, 1.8 diameters from laterals. Posterior median eyes 0.2 diameter apart. Height of clypeus equals 0.4 diameter of anterior median eye. Second tibia as thick as first. Total length 6.7 mm. Carapace 3.5 mm long, 2.7 wide, 1.6 behind lateral eyes. First femur 4.6 mm, patella and tibia 5.2, metatarsus 4.2, tarsus 1.4. Second patella and tibia 4.5 mm, third 2.1, fourth 3.1.

Note. This might be the male of *M. tapa*.

Diagnosis. The palpus of this species (Fig. 67) lacks the spine on the tegulum of

M. dubia (at 3 hr in Fig. 21) and has a smaller comb (at 1 hr in Fig. 66) than *M. pimentel* (Fig. 27). Most palpal sclerites differ slightly from those two similar species.

Metazygia incerta (O. P.-Cambridge)
Figures 69–73; Map 2J

Epeira incerta O. P.-Cambridge, 1889: 23, pl. 4, fig. 15, ♀. Female syntypes from Costa Rica, in BMNH, examined. Keyserling, 1892: 163, pl. 8, fig. 120, ♀.

Epeira fecunda O. P.-Cambridge, 1889: 26, pl. 6, figs. 9, 10, ♀, ♂. Numerous syntypes from Guatemala in BMNH, examined. Keyserling, 1892: 164, pl. 8, fig. 121, ♀, ♂. First synonymized by F. P.-Cambridge, 1904.

Epeira maculata:—Keyserling, 1892: 242. Six female and one male paralectotype from Baltimore. The female lectotype is a *Mangora* (see Levi, 1975).

Aranea incerta:—F. P.-Cambridge, 1904: 512, pl. 49, figs. 7, 8, ♀, ♂. Roewer, 1942: 845.

Araneus incertus:—Bonnet, 1955: 521. Kraus, 1955: 22, figs. 62–65, ♀, ♂.

Metazygia incerta:—Levi, 1991a: 179.

Synonymy. There are male specimens in the vial with the female syntypes of *Epeira incerta*, which may have been added later. Keyserling reports *Epeira incerta* as coming from Guatemala, but both Keyserling and O. P.-Cambridge examined the same females. Paralectotypes of *Epeira maculata* (Levi, 1975) are this species; they are marked as coming from Baltimore, but this is an erroneous G. Marx locality.

Description. Female from San José, Costa Rica. Carapace orange-brown. Chelicerae, labium, endites orange. Sternum, coxae orange, legs brown. Dorsum of abdomen black and white (Fig. 72); venter dusky, some white pigment spots in center. Eyes subequal. Anterior median eyes 0.8 diameter apart, 1 diameter from laterals. Posterior median eyes 0.3 diameter apart. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 6.5 mm. Carapace 2.7 mm long, 2.0 wide, 1.1 behind lateral eyes. First femur 2.9 mm, patella and tibia 3.6, metatarsus 2.6, tarsus 0.9. Second patella and tibia 2.9 mm, third 1.7, fourth 2.4.

Male from Monteverde, Costa Rica. Color as in female, but abdomen much

darker. Posterior median eyes same diameter as anterior medians, laterals 0.9 diameter. Anterior median eyes their diameter apart, their diameter from laterals. Posterior median eyes 0.3 diameter apart, 2 diameters from laterals. Height of clypeus equals 0.3 diameter of anterior median eye. Endite with small, sharp tooth, palpal femur with facing tubercle. First coxa with small hook. Second tibia thicker than first, without macrosetae. Total length 4.6 mm. Carapace 2.8 mm long, 2.2 wide, 1.2 behind lateral eyes. First femur 4.4 mm, patella and tibia 5.7, metatarsus 4.5, tarsus 1.2. Second patella and tibia 4.5 mm, third 2.2, fourth 4.0.

Note. Males and females were collected together.

Variation. Total length of females 4.5 to 9.0 mm, males 3.7 to 6.3. Illustrations were made from a female from San José, Costa Rica, and male from Puntarenas Prov., Costa Rica.

Diagnosis. The female differs from other *Metazygia* species by having the epigynum in ventral view an entire, rectangular plate, not showing openings (Fig. 69): the openings are anterior of the plate and not visible in ventral view. The male differs by having two teeth on the embolus lamella (L in Fig. 73), below the lamella's sclerotized tip.

Natural History. Specimens were found in *Trypargilum nitidum* and *T. tenocitla* wasp nests at Cañas, Costa Rica. Most observations come from R. Buskirk (personal communication, 28 Feb. 1972). The observations were made in Monteverde, 1,380 m, Costa Rica. The orb is made in tree branches about 1 m above ground. Spiders are active in the hub at night from dusk to about 30 minutes to one hour after sunrise; during the day they are in folded-leaf retreats near or attached to the orb. The orbs are rebuilt every 2 to 4 days, depending on the damage to the web. In the Monteverde area, *M. incerta* is most abundant in moist habitats such as a river valley, and in places they are only a few decimeters above the water. Individual orbs

may be quite close to one another, nearly adjacent, but not continuous. Other collecting localities were rain forest, humid forest, cloud forest, a grapefruit orchard near a river, a porch at night, and mixed vegetation.

Distribution. Common from Belize to Panama (Map 2J).

Specimens Examined. BELIZE San Ignacio [17°10'N, 89°04'W] (MCZ). GUATEMALA *Petén*: End Lago Petén Itzá (AMNH). *Alta Vera Paz*: Cobán (AMNH). HONDURAS Copan (AMNH); Lancetilla nr. Tela (MCZ); Siguatepeque, 1,100–1,200 m (AMNH). EL SALVADOR (Desague, Laguna Guija, 460 m, Kraus, 1955). NICARAGUA Granada (MCZ); Managua (JMM); Musawas, Río Waspuc (AMNH); 5 km N Matagalpa (JMM); Islas de Solentiname (JMM); 5 km E Jinotepe (JMM); 122 km S Managua, W shore Lago Nicaragua, 32 m (USNM). COSTA RICA *Heredia*: Heredia (AMNH); San José de la Montaña (DU). *Alajuela*: Grecia (AMNH); Palmares (AMNH); road to Volcán Poás, 1,500 m (MCZ). *Guanacaste*: 4 km NW Cañas, La Pacífica (MCZ); Peñas Blancas (S. Riechert, AMNH); La Pacífica, 160 km SW, Finca Palo Verde (MCZ); Tilarán (MNRJ). *Limón*: Penuhst 10 km N Cahuita (DU). *Cartago*: Cartago, 1,400 m (AMNH); Moravia (CAS); Turrialba (CAS, CUC); Paraíso (AMNH). *San José*: Braulio Carrillo Natl. Park (DU); Escazú (MCZ); San José, 1,200 m (AMNH, DU, MCZ); Ciudad Universitaria (USNM); La Verbena (MCZ); San Pedro de Montes (USNM); Zapote (FSCA). *Puntarenas*: Monteverde, 1,380 m (AMNH, DU, MCZ). PANAMA *Bocas del Toro*: Changuinola (AMNH, CUC).

Metazygia pallidula (Keyserling)

Figures 74–80; Map 2E

Epeira pallidula Keyserling, 1864: 124, pl. 4, figs. 14, 15, ♀. Female holotype from St. Fé de Bogota, New Granada [Bogotá, Colombia], in BMNH, examined. Keyserling, 1892: 158, pl. 8, fig. 116, ♀.

Epeira simplicissima Keyserling, 1883: 203, pl. 15, fig. 8, ♀. Female holotype from Tumbes [Tumbes, Depto. Tumbes], Peru, in PAN, examined. Keyserling, 1892: 169, pl. 8, fig. 125, ♀. NEW SYNONYMY.

Singa mollybyrnae McCook, 1894: 229, pl. 19, fig. 1, ♀. One female from District of Columbia, United States, in ANSP, examined. Roewer, 1942: 878. Synonymized by Levi, 1972: 231.

Aranea pallidula.—F. P.-Cambridge, 1904: 514, pl. 49, fig. 13, ♀. Roewer, 1942: 849.

Aranea simplicissima.—Roewer, 1942: 852.

Araneus mollybyrnae.—Bonnet, 1955: 546.

Araneus pallidulus.—Bonnet, 1955: 562.

Araneus simplicissimus.—Bonnet, 1955: 600.

Araneus palloides Roewer, 1955: 1715. New name

for *Epeira pallidula* Keyserling, thought to be preoccupied by *Araneus pallidula* Clerck, 1758 (= *Clubiona pallidula*).

Metazygia pallidula.—Levi, 1991: 179.

Synonymy. The holotypes of *Epeira pallidula* and *Singa mollybyrnae* have the same large lateral openings of the epigynum. The holotype of *S. mollybyrnae* comes from Washington, D.C., and another specimen from Biscayne Bay, Florida. Each is an erroneous G. Marx locality.

Description. Female from Chiriquí Prov., Panama. Carapace orange, cephalic area dusky. Chelicerae, labium, endites, sternum orange. Coxae, legs orange, distally darker. Dorsum of abdomen whitish with anterior pair of black marks and indistinct dusky folium (Fig. 77); venter a white transverse patch posterior to the epigynum (Fig. 78). Posterior median eyes 0.8 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.8 diameter apart, 1 diameter from laterals. Posterior median eyes 0.2 diameter apart, 2.8 diameters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 5.6 mm. Carapace 2.3 mm long, 1.9 wide, 1.1 behind lateral eyes. First femur 2.7 mm, patella and tibia 3.1, metatarsus 2.3, tarsus 0.9. Second patella and tibia 2.7 mm, third 1.5, fourth 2.2.

Male from Chiriquí Prov., Panama. Color as in female, but legs with indistinct dark rings and no white on venter. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.8 diameter apart, 0.8 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1.6 diameters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 4.5 mm. Carapace 2.5 mm long, 1.9 wide, 0.9 behind lateral. First femur 3.5 mm, patella and tibia 4.5, metatarsus 3.7, tarsus 1.2. Second patella and tibia 3.6 mm, third 1.8, fourth 2.5.

Note. Males and females are commonly collected together.

Variation. Total length of females 3.8

to 6.5 mm, males 2.5 to 4.2. Illustrations were made from specimens from Chiriquí Prov., Panama.

Diagnosis. The large pair of ear-like depressions on the ventral view of the epigynum (Fig. 74) separates females from similar species. Males can be separated by the shape of the embolus with two rounded lobes "below" (Figs. 79, 80) and by the two pointed lobes of the embolus lamella (Fig. 79).

Natural History. Specimens were collected from a wet area near Acapulco, Mexico; from wet forest in Limón Prov., Costa Rica; on a bridge, banks of a river bed, and a rock wall in a garden in Chiriquí Prov., Panama; in a banana grove in Sullana, Peru; in light under the eaves of a house in northern Colombia; and in low shrubs and large herbs at night in Turrialba, Costa Rica. Many collections were made at night.

Distribution. From central Mexico to French Guiana and Ecuadorian and Peruvian coast (Map 2E).

Specimens Examined. MEXICO *Veracruz:* Coatzacoalcos (AMNH); Tlacotalpan (AMNH). *Guerrero:* 13 km W Acapulco (AMNH, MCZ); 2.4 km W Acapulco (AMNH); Acapulco (MCZ). *Tabasco:* Comacalco (AMNH). *Chiapas:* La Zacualpa (AMNH). EL SALVADOR San Salvador (AMNH). HONDURAS Comayagua (FSCA). NICARAGUA Managua (AMNH, CUC). COSTA RICA *Heredia:* W Alajuela (Riechert Coll.); La Selva (AMNH, MCZ). *Alajuela:* Fortuna [Río Fortuna], nr. Esparta (MCZ). *Limon:* nr. Cahuita (MCZ); 5 km E Guápiles (DU); Tortuguero Natl. Park (DU). *Cartago:* Turrialba (CAS, MCZ). *San José:* San José (MCZ); San Isidro (MCZ). *Puntarenas:* Corcovado Natl. Park, Sirena (MCZ); Jacó (MCZ); Parrita (MCZ); San Isidro del General (MCZ); Tárcoles (MCZ); 10 km N Mal País (MCZ). PANAMA *Boga del Toro:* Changuinola (MCZ). *Chiriquí:* Bambito nr. Cerro Punta, 1,400 m (CAS, MCZ); Cerro Punta (AMNH); Boquete (AMNH, MCZ); 9 km N David (USNM); David (MCZ, MIUP); La Fortuna (MCZ, MIUP); Volcán (AMNH, MCZ); Volcán Baru (FSCA). *Colón:* Gamboa (MCZ); France Field (MCZ); Frijoles (MCZ). *Coelé:* El Copé (MIUP); El Valle (AMNH, MCZ). *Panamá:* Balboa (MCZ); Barro Colorado Island (AMNH, MCZ); road to Chiva (MCZ); Cerro Azul (MIUP); Experimental Gardens (MCZ); Forest Reserve (MCZ); Madden Dam (MCZ); Pedro Miguel (MCZ); Pipeline Road (MCZ); Playa Corona nr. San Carlos (MCZ); Summit (MCZ). VENEZUELA *Delta Amacuro:* Río Orinoco delta (MCZ). GUYANA

Bartica: Kartabo (CUC). FRENCH GUIANA St. Laurent du Maroni (PAN). COLOMBIA *La Guajira:* Río Guatapurí, 1,100 m. *Magdalena:* above Minca Valley, 880 m (IBNP); East Cerro Dunarua, 1,300 m (IBNP); Río Domachuí, 1,700 m (IBNP); Río Cordua, 800 m (IBNP); Río Frío, 530 m (IBNP); stream betw. Cerros Chivolo and Chumchuruba, 1,100 m (IBNP); Río Gaira (SMF); San Pablo (IBNP); San Sebastian de Rebango, 3,300 m, Sierra Nevada de Santa Marta (AMNH); Serra Nueva Granada, 1,310 m (IBNP). *César:* Escorpa Mission, Sierra de Parija, 1,300–1,400 m (AMNH). *Cundinamarca:* 22 km SE Caqueza (CAS) *Córdoba:* Ayapel nr. Ciénaga (MCZ). *Meta:* Villavicencio (AMNH); 5 km W Villavicencio (CAS). *Antioquia:* Mutatá (MCZ). *Valle:* Cali (MCZ); Lago Colima nr. Darien (MCZ). *Nariño:* Barbaocoas (MCZ). ECUADOR *Pichincha:* Santo Domingo de las Coloradas (FSCA). *Manabí:* El Carmen (AMNH); road betw. Crucita and Charapoto (MCZ). *Guayas:* 4.8 km N Manglar Alto (CAS); Guayaquil (CAS); Milagro (CAS); Puná Island (CAS). *Azuay:* Jubones (CAS). *El Oro:* Buena Vista, 20 km Machala (CAS). PERU *Loreto:* Barranca (CAS). *Piura:* Negritos (CAS); Mallares, Río Chira (CAS); nr. Miramar (CAS); Porta Chuala [? Portachuelo] (CAS); 6 km W Sullana (CAS); Sullana (CAS); Las Lomas (CAS). *Lambayeque:* 10 km S Chiclayo (CAS). *Libertad:* Pacasmayo (PAN). *Lima:* Lima (CAS). *Ayacucho:* Monterrico (PAN).

Metazygia enabla new species

Figures 81–86; Map 2E

Holotype. Female holotype from Cerro de la Neblina, base camp, 140 m, 0°50'N, 66°10'W, Territ. Federal Amazonas, Venezuela, 21–28 Feb. 1985, male paratype, 9 Feb. 1985, both from low foliage (W. E. Steiner), in USNM. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace light orange, eye region black. Chelicerae distally much darker orange. Labium, endites dusky orange. Sternum, legs orange. Dorsum of abdomen with dense white pigment spots and two dark gray longitudinal bands; bands are most distinct posteriorly and become indistinct anteriorly (Fig. 84). Venter light dusky. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.3 diameter apart, 0.3 diameter from laterals. Posterior median eyes 0.2 diameter apart. Height of clypeus equals 0.2 diameter of anterior median eye. Total length 3.7 mm. Carapace 1.8 mm long, 1.4 wide, 0.8 behind lateral eyes. First femur 1.6 mm, patella and tibia 1.8, metatarsus

1.1, tarsus 0.6. Second patella and tibia 1.6 mm, third 0.9, fourth 1.4.

Male paratype. Color as in female, but orange parts slightly dusky and dark bands of dorsum of abdomen more distinct. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.3 diameter apart, 0.2 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1 diameter from laterals. Height of clypeus equals 0.3 diameter of anterior median eye. Total length 2.8 mm. Carapace 1.53 mm long, 1.17 wide, 0.57 behind lateral eyes. First femur 1.43 mm, patella and tibia 1.67, metatarsus 1.14, tarsus 0.59. Second patella and tibia 1.33 mm, third 0.88, fourth 1.14.

Note. Males and females were matched because both were collected at the same locality, in the same habitat, and have similar markings: longitudinal dark bands, darkest posteriorly (Fig. 84).

Diagnosis. The female epigynum differs from that of others by the ventrally projecting median plate (at 6 hr in Fig. 81, at center of Fig. 82) and the sclerotized edge of the lateral plates, as seen on each side in ventral view (Fig. 81). The male differs by the long, exposed embolus, which is not covered by the embolus lamella (Fig. 85).

Metazygia redfordi new species
Figures 87–90; Map 2C

Holotype. Female holotype from Parque Nacional das Emas, nr. Mineiros, Est. Goiás, Brazil, associated with a termite mound, Sept.–Oct. 1981 (K. H. Redford) in MZSP ex MCZ. The species is named after the collector.

Description. Female holotype. Carapace orange. Chelicerae, labium, endites orange. Sternum orange. Coxae orange,

legs black. Dorsum of abdomen whitish with five pairs of black patches (Fig. 90); venter black except for book-lungs and area in-between, sides black. Posterior median eyes 0.6 diameter of anterior medians, anterior laterals 0.6 diameter, posterior laterals 0.5. Anterior median eyes 0.4 diameter apart, 1.5 diameters from laterals. Posterior median eyes 0.3 diameter apart. Height of clypeus equals 0.6 diameter of anterior median eye. Total length 7.5 mm. Carapace 3.7 mm long, 2.7 wide, 1.5 behind lateral eyes. First femur 2.8 mm, patella and tibia 3.5, metatarsus 2.2, tarsus 1.1. Second patella and tibia 3.1 mm, third 2.0, fourth 2.9.

Diagnosis. The contrasting markings on the abdomen (Fig. 90) would suggest that this species belongs in *Alpaida*; the epigynum (Figs. 87–89), however, is that of a *Metazygia*. Unlike that of other species, the scape is wide anteriorly (Fig. 87). The shape of the median plate in ventral and posterior view (Figs. 87, 88) is unlike that of other species.

Metazygia isabelae new species
Figures 91–93; Map 2C

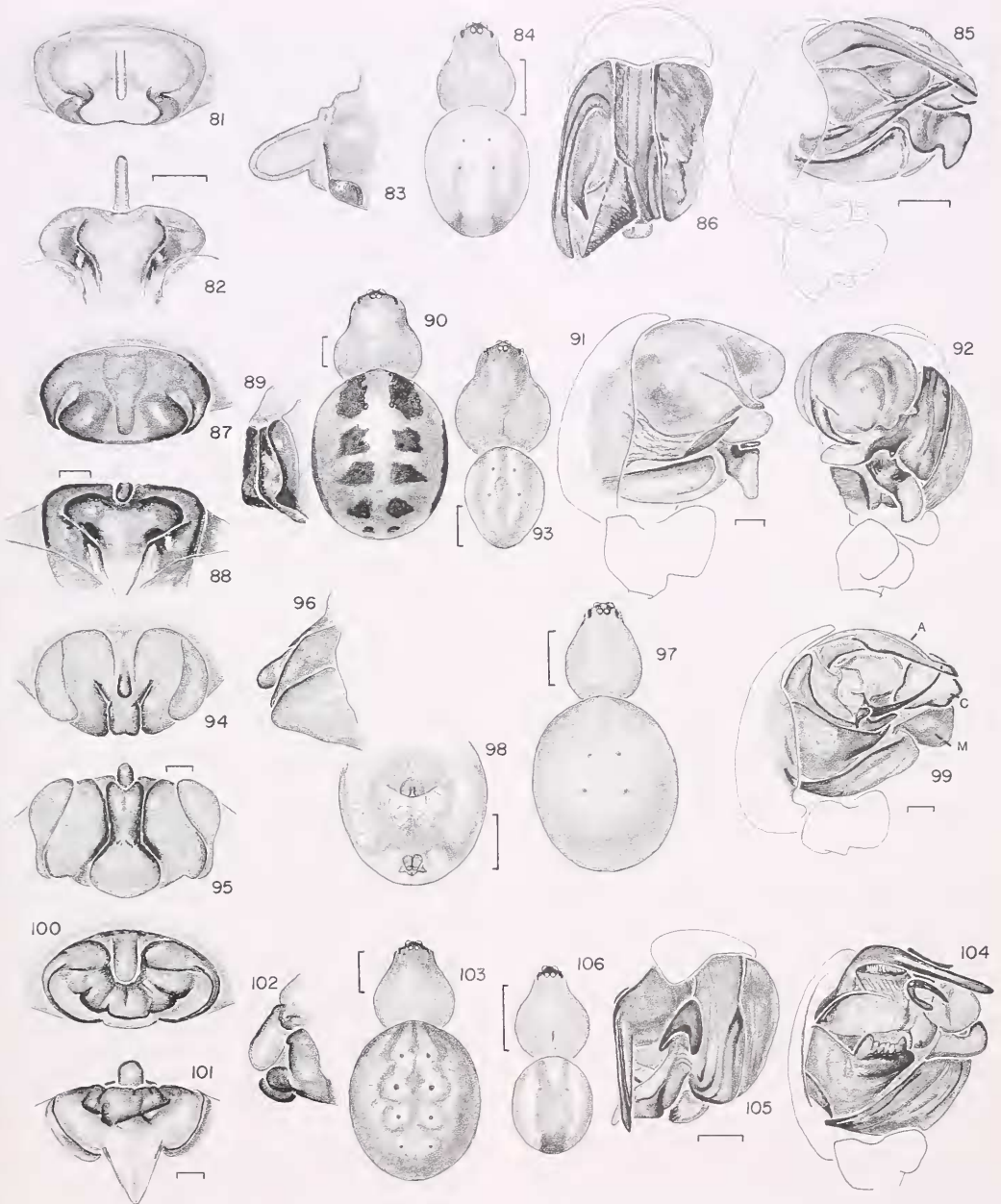
Holotype. Male holotype from Santa Isabel do Morro, Ilha do Bananal, Est. Tocantins, Brazil, June 1961 (M. Alvarenga), in AMNH. The species is named after the local saint.

Description. Male holotype. Cephalothorax orange, the third and fourth coxae and legs lightest. Dorsum of abdomen light, with three faint, dusky, longitudinal bands (Fig. 93); venter light. Posterior median eyes 0.6 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.5 diameter apart, 1.3 diameters from laterals. Posterior median eyes 0.2 diameter apart, 2.8 diameters from laterals. Height

Figures 81–86. *Metazygia enabla* n. sp. 81–84, female. 81–83, epigynum. 81, ventral. 82, posterior. 83, lateral. 84, dorsal. 85–86, male left palpus. 85, mesal. 86, apical.

Figures 87–90. *M. redfordi* n. sp., female. 87–89, epigynum. 87, ventral. 88, posterior. 89, lateral. 90, dorsal.

Figures 91–93. *M. isabelae* n. sp., male. 91, 92, palpus. 91, mesal. 92, ventral. 93, dorsal.



Figures 94–99. *M. rogenhoferi* (Keyserling). 94–98, female. 94–96, epigynum. 94, ventral. 95, posterior. 96, lateral. 97, dorsal. 98, abdomen, ventral. 99, male palpus.

Figures 100–103. *M. barueri* n. sp., female. 100–102, epigynum. 100, ventral. 101, posterior. 102, lateral. 103, dorsal.

Figures 104–106. *M. jamari* n. sp., male. 104, 105, palpus. 104, ventral. 105, apical. 106, dorsal.

Abbreviations. A, terminal apophysis; C, conductor; M, median apophysis.

Scale lines. 1.0 mm, genitalia 0.1 mm.

of clypeus equals 0.6 diameter of anterior median eye. Total length 4.8 mm. Carapace 2.8 mm long, 2.1 wide, 1.1 wide behind lateral eyes. First femur 3.1 mm, patella and tibia 3.9, metatarsus 3.4, tarsus 1.1. Second patella and tibia 3.2 mm, third 1.8, fourth 2.4.

Diagnosis. This male has an enlarged bubble-like subterminal apophysis (Figs. 91, 92) unlike that of any other species.

Metazygia rogenhoferi (Keyserling)
Figures 94–99; Map 2C

Zilla rogenhoferi Keyserling, 1878: 578, pl. 14, fig. 6, ♀. Keyserling, 1892: 296, pl. 15, fig. 219. Female holotype from Brazil in NMW, examined.

Zygiella rogenhoferi:—Roewer, 1942: 887. Bonnet, 1959: 5005.

Metazygia rogenhoferi:—Levi, 1974: 271.

Description. Female from Guaíba, Rio Grande do Sul. Carapace light orange. Chelicerae, labium, endites light orange. Sternum light orange. Legs light orange. Dorsum of abdomen white, with indistinct anterior dusky patches (Fig. 97). Venter with white pigment patches behind epigynum, on the sides and behind spinnerets (Fig. 98). Posterior median eyes 0.9 diameter of anterior medians, laterals 0.9 diameter. Anterior median eyes 1 diameter apart, 0.8 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.2 diameters from laterals. Height of clypeus equals 0.7 diameter of anterior median eye. Total length 3.3 mm. Carapace 1.8 mm long, 1.4 wide, 0.7 behind lateral eyes. First femur 1.8 mm, patella and tibia 2.1, metatarsus 1.6, tarsus 0.7. Second patella and tibia 1.8 mm, third 1.1, fourth 1.5.

Male from Guaíba, Rio Grande do Sul. Color as in female, but with pairs of dusky brackets on dorsum of abdomen and abdomen with less white pigment. Posterior median eyes 0.9 diameter of anterior medians, laterals 0.9 diameter. Anterior median eyes their diameter apart, 0.5 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.4 diameters from laterals. Height of clypeus equals 0.6 diameter of anterior median eye. Second tibia

thinner than first, with few macrosetae. Total length 4.1 mm. Carapace 1.9 mm long, 1.6 wide, 0.7 behind lateral eyes. First femur 2.2 mm, patella and tibia 3.1, metatarsus 2.4, tarsus 0.9. Second patella and tibia 2.1 mm, third 1.2, fourth 1.6.

Note. Males and females were collected together.

Variation. Total length of females 3.4 to 5.6 mm, males 3.4 to 4.2. The lateral bracts framing the epigynum on each side (Fig. 94) are transparent and variable in shape. Illustrations were made from specimens from Guaíba, Rio Grande do Sul, Brazil.

Diagnosis. Females differ from other female *Metazygia* by having transparent bracts on each side of the epigynum, having a short scape (Fig. 94), and by the flask-shaped median plate as seen in posterior view (Fig. 95). Males are separated from others by the long sword-shaped embolus (Fig. 99).

Natural History. Specimens were collected with bromeliads in São Paulo state.

Distribution. From Bahia State to Rio Grande do Sul, Brazil (Map 2C).

Specimens Examined. BRAZIL *Bahia*: Uruçuca, Fazenda Almada (MCN); Fazenda Jacarandá, Itamarajú (MCN). *Rio de Janeiro*: Rio de Janeiro, Pinheiro (MNRJ). *São Paulo*: Alto da Serra (MZSP); Barueri (MZSP); Itanhaém, Baixo Rio Branco (MZSP); Campo Limpo, EFSD (AMNH); Juquiá, Fazenda Poço Grande (MZSP); Jurubatuba (MZSP); Osasco (MZSP); Ribeirão Pires (AMNH); Ilha de São Sebastião (MZSP); São Bernardo (MZSP). *Rio Grande do Sul*: Canela (MCN); Rio Grande, Estação Ecológica do Taim (MCN); Santa Vitória do Palmar, Estação Ecológica do Taim (MCN); Guaíba, Granja Carola (MCN); Praia do Curumim (MCN); Torres (MCN); Triunfo (MCN); Viamão, Aguas Belas (MCN); Viamão, Lagoa do Casamento (MCN).

Metazygia barueri new species
Figures 100–103; Map 2F

Holotype. Female holotype and male paratype from Barueri, Est. São Paulo, Brazil, 8 Sept. 1965 (K. Lenko), in MZSP no. 4026. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace light orange, cephalic region orange. Chelicerae brown. Labium, endites or-

ange. Sternum light orange. Coxae light orange, legs dusky orange. Dorsum of abdomen with folium outlined by dusky brackets and with a median longitudinal dusky line (Fig. 103). Venter light, without marks. Posterior median eyes 0.6 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.8 diameter apart, 1 diameter from laterals. Posterior median eyes 0.4 diameter apart. Height of clypeus equals 0.5 diameter of anterior median eye. Total length 5.5 mm. Carapace 2.4 mm long, 1.9 wide, 1.1 behind lateral eyes. First femur 2.1 mm, patella and tibia 2.3, metatarsus 1.7, tarsus 0.9. Second patella and tibia 2.1 mm, third 1.3, fourth 1.9.

Diagnosis. Unlike the epigynum of other species, the area behind and on the side of the scape is wrinkled (Figs. 100–102).

Metazygia jamari new species

Figures 104–106; Map 2F

Holotype. Male holotype from Jamari, Rondônia, Brazil, 23 Jan. 1989 (Equipe Operação Jamari), in MCN no. 18550. The specific name is a noun in apposition after the type locality.

Description. Male holotype. Carapace orange. Chelicerae, labium, endites orange. Sternum orange. Legs orange. Dorsum of abdomen white with a pair of longitudinal dark bands (Fig. 106); venter gray. Carapace rebordered above first coxa. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.8 diameter apart, 0.6 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1.4 diameters from laterals. Height of clypeus equals 0.6 diameter of anterior median eye. Second tibia thinner than first. Total length 2.5 mm. Carapace 1.5 mm long, 1.1 wide, 0.5 behind lateral eyes. First femur 1.7 mm, patella and tibia 2.1, metatarsus 1.6, tarsus 0.7. Second patella and tibia 1.6 mm, third 0.8, fourth 1.2.

Note. I was not successful matching this male to a female.

Variation. Total length of males 2.4 to 2.8. The Porto Velho male differed slightly in the shape of the embolus. It is not known

if the horse shoe-shaped structure above the embolus (Figs. 104, 105) breaks off when mating. Illustrations were made from the holotype.

Diagnosis. *Metazygia jamari* differs from other species by the U-shaped tip of the embolus and by the straight terminal apophysis (at 12 hr to 2 hr in Fig. 104, left in Fig. 105).

Distribution. Amazon region (Map 2F).

Specimens Examined. SURINAM *Marowijne:* Lawa River, Anapaiké Village, 8–29 Nov. 1963, 1♂ (B. Malkin, AMNH). BRAZIL *Roraima:* Ilha de Maracá, Rio Uraricoera, 29 Mar. 1987, 1♂ (A. A. Lise, MCN 20060). *Rondônia:* Porto Velho, Rio Tapirape, Feb., Mar. 1963, 1♂ (P. Pinheiros, AMNH).

Metazygia crewi (Banks)

Plate 1; Figures 107–113; Map 2I

Singa crewi Banks, 1903: 342, pl. 15, fig. 8, ♀. Female holotype from Haiti, lost (not in AMNH, ANSP, CUC, MCZ, USNM). Roewer, 1942: 877.

Larinia coamensis Petrunkevitch, 1930: 335, figs. 221–224, ♀. Female holotype from Coamo Springs, Puerto Rico, in PMY, examined. Roewer, 1942: 771. Bonnet, 1957: 2348. First synonymized by Bryant 1945.

Aranea crewi:—Bryant, 1945: 364, figs. 1–3, ♂.

Araneus crewi:—Bonnet, 1955: 471.

Metazygia crewi:—Harrod, Levi, and Leibensperger, 1991: 245.

Description. Female from Puerto Plata, Dominican Republic. Carapace dusky orange, black between eyes, margin of thoracic region darker. Chelicerae dusky orange. Labium, endites orange. Sternum light yellow-brown, black on each side, black fusing posteriorly to form a V shape. Legs light orange, distally with some dark rings. Dorsum of abdomen with dusky median band, a white cardiac mark, a white band on each side and black on sides (Fig. 110). Venter black with a square white patch posterior to genital groove, black surrounding spinnerets, sides light (Fig. 111). Carapace narrow in front without thoracic depression. Posterior median eyes 0.6 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.6 diameter apart, 0.7 from laterals. Posterior median eyes 0.4 diameter apart, 2 diam-

eters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 5.0 mm. Carapace 2.1 mm long, 1.6 wide, 0.7 behind lateral eyes. First femur 2.3 mm, patella and tibia 2.5, metatarsus 1.9, tarsus 0.8. Second patella and tibia 1.9 mm, third 1.2, fourth 1.8.

Male specimen from Puerto Plata, Dominican Republic. Color as in female. Thoracic depression a longitudinal line. Posterior median eyes 0.7 diameter of anterior medians, anterior laterals 0.7, posterior 0.5. Anterior median eyes 1 diameter apart, slightly less from laterals. Posterior median eyes 0.4 diameter apart, 2 diameters from laterals. Height of clypeus equals 0.8 diameter of anterior median eye. First coxa with hook, fourth with a small macroseta. Total length 3.7 mm. Carapace 1.9 mm long, 1.5 wide, 0.6 behind lateral eyes. First femur 2.3 mm, patella and tibia 2.9, metatarsus 2.2, tarsus 0.9. Second patella and tibia 2.0 mm, third 1.1, fourth 1.7.

Note. Males and females were collected together.

Variation. Total length of females 4.0 to 5.5 mm, males 3.3 to 3.7. Some females have three teeth on the anterior margin of the chelicerae, two on the posterior; others have four and three. The epigynum's transparent scape can be short (Fig. 107) or long and overhanging the anterior border of the epigynum; often it appears torn off with only a dark round scar. Illustrations were made from specimens collected in Puerto Plata, Dominican Republic; the

web (Pl. 1) was photographed near Maricao, Puerto Rico.

Diagnosis. The female is separated from other species by having an epigynum that, when viewed posteriorly, has two long slits, separated by a narrow median plate (Fig. 108). The male is distinguished by having a palp with filamentous embolus and overhanging terminal apophysis (A) (Figs. 112, 113).

Natural History. Specimens were collected sweeping in forest on St. Johns, Virgin Islands, and in a coffee plantation at Jayuya, Puerto Rico. Many specimens came from an abandoned, dry, sunny road on a south-facing slope near Maricao, Puerto Rico, at 800 m elevation. The spiders had retreats in the heads of grass above a small transparent web (Pl. 1). These spiders could not be dislodged with a sweep net but had to be collected individually.

Distribution. Greater Antilles, Virgin Islands (Map 21).

Specimens Examined. CUBA [no local.], 1♀ (R. V. Chamberlin, AMNH). HAITI Cap Haitien, Mar. 1934, 2♀ (Utowana Exped., MCZ); Dame Marie, 1941, 2♀, 1♂ (A. Audant, MCZ); Port-au-Prince, July 1941, 13♀, 2♂ (A. Audant, MCZ); 18–21 July 1955, 4♀, 2♂, 8 imm. (A. F. Archer, AMNH); 21, 22 Mar. 1969, 2♀; 30 Aug.–7 Sept. 1969, 2♀, 1♂ (L. Reynolds, MCZ). DOMINICAN REPUBLIC Balneario Saladilla, S Barahona, 8 Aug. 1958, 1♀ (A. F. Archer, AMNH); 5 km NW Las Matas de Farfan, 25 Aug. 1970, 1♀ (B. Patterson, MCZ); Loma de Los Piños, Colonia Ramfis, T. Valdez, 700–900 m, 7 Aug. 1958, 2♀ (A. F. Archer, E. Boynie Moya, AMNH); Puerto Plata, July–Aug. 1941, 23♀, 2♂ (D. Hurst, MCZ); La Gran Chorra, Altigracia, 11 Apr. 1992, 3♀ (F. Del Monte, MNSD). PUERTO RICO Jayuya, 1,000 m, 20–26 Mar. 1986, 2♀, imm. (H., L.

Figures 107–113. *Metazygia crewi* (Banks). 107–111, female. 107–109, epigynum. 107, ventral. 108, posterior. 109, lateral. 110, dorsal. 111, abdomen, ventral. 112, 113, left male palpus. 111, mesal. 112, ventral.

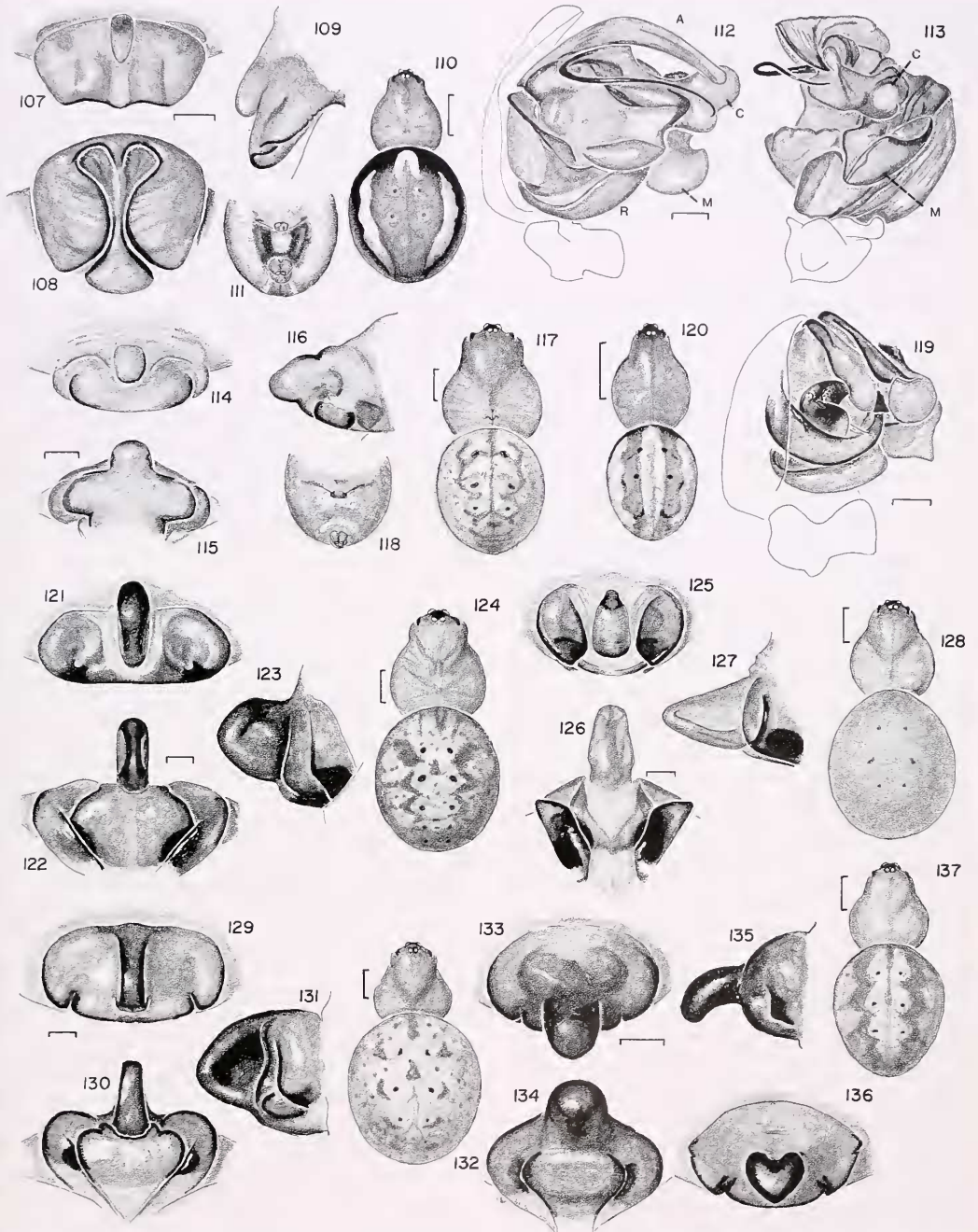
Figures 114–118. *M. vaurieorum* n. sp., female. 114–116, epigynum. 114, ventral. 115, posterior. 116, lateral. 117, dorsal. 118, abdomen, ventral.

Figures 119, 120. *M. carrizal* n. sp., male. 119, palpus. 120, dorsal.

Figures 121–124. *M. taman* n. sp., female. 121–123, epigynum. 121, ventral. 122, posterior. 123, lateral. 124, dorsal.

Figures 125–128. *M. paquisha* female. 125–127, epigynum. 125, ventral. 126, posterior. 127, lateral. 128, dorsal.

Figures 129–132. *M. nobas* n. sp., female. 129–131, epigynum. 129, ventral. 130, posterior. 131, lateral. 132, dorsal.



Figures 133–137. *M. goeldii* n. sp., female. 133–136, epigynum. 133, ventral. 134, posterior. 135, lateral. 136, paratype, ventral. 137, dorsal.

Abbreviations. A, terminal apophysis; C, conductor; M, median apophysis; R, radix.

Scale lines. 1.0 mm, genitalia 0.1 mm.

Levi, MCZ); Reserva Forestal, Maricao, Monte de Estado, 800 m, 4–6 Apr. 1989, 13♀, 16 imm. (H., L. Levi, MCZ). U.S. VIRGIN ISLANDS St. Johns, forest above Cinnamon Bay, 17 Mar. 1970, 1♀, 1♂ (H., L., F. Levi, MCZ).

Metazygia vaurieorum new species

Figures 114–118; Map 2I

Holotype. Female holotype and one paratype from Variedades, 14°01'N, 90°30'W, Suchitepéquez, 120–170 m, Guatemala 27–31 Aug. 1947, and two female paratypes, 1–4 July 1947 (C. and P. Vaurie), in AMNH. The species is named after the collectors.

Note. The location of the type locality is published in Vaurie and Vaurie (1949).

Description. Female holotype. Carapace orange, cephalic region darker. Chelicerae dark orange-brown. Labium, endites, sternum orange. Coxae legs orange. Dorsum of abdomen with gray folium pattern on white (Fig. 117). Venter with transverse white patch behind epigynum and semicircular white line in front of spinnerets (Fig. 118). Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.7 diameter apart, 1.3 diameters from laterals. Posterior median eyes 0.2 diameter apart. Height of clypeus equals 0.5 diameter of anterior median eye. Total length 6.0 mm. Carapace 3.5 mm long, 2.7 wide, 1.5 behind lateral eyes. First femur 3.4 mm, patella and tibia 4.1, metatarsus 3.2, tarsus 1.1. Second patella and tibia 3.6 mm, third 2.0, fourth 2.7.

Diagnosis. In ventral view the epigynum (Fig. 114) resembles that of *M. crewi* (Fig. 107), but the scape is a large knob rather than a flat plate (perhaps a piece has broken off). It differs in posterior view by having a wide median plate (Fig. 115).

Metazygia carrizal new species

Figures 119, 120; Map 2I

Holotype. Male holotype from Mataquesuintla, El Carrizal, Depto. Jalapa, Guatemala, beating foliage at river, 25 Apr. 1982 (S. Fend), in CAS. The specific name is a noun in apposition after the type locality.

Description. Male holotype. Carapace dusky orange to black. Chelicerae dusky

orange. Labium black, endites orange. Sternum black. Coxae light orange, legs orange with dark rings. Dorsum of abdomen with median longitudinal light band and gray band to the side, whitish color to the sides of gray (Fig. 120). Venter dark with indistinct white pigment spots in center. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.8 diameter apart, 0.8 diameter from laterals. Posterior median eyes 0.3 diameter apart, 2 diameters from laterals. Height of clypeus equals 0.3 diameter of anterior median eye. Second tibia thicker than first, with long macrosetae on both first and second tibiae. Total length 4.2 mm. Carapace 2.1 mm long, 1.5 wide, 0.8 behind lateral eyes. First femur 2.3 mm, patella and tibia 3.1, metatarsus 2.3, tarsus 0.9. Second patella and tibia 2.3 mm, third 1.2, fourth 1.8.

Note. This was collected near a *M. vaurieorum* female. However, it is considered to represent another species, as it has a different coloration: black sternum in male, light in female; white above cardiac area in male (Fig. 120), dark in female (Fig. 117).

Diagnosis. This species differs from all others by the terminal apophysis hanging “down” with its axis at an acute angle to the axis of the cymbium and by the shape of the sclerotized embolus lamella (at center of Fig. 119) and by the U-shaped embolus with a pointed cap (Fig. 119).

Metazygia taman new species

Figures 121–124; Map 2I

Holotype. Female holotype from near Taman, ca. 16 km SW of Tamazunchale on Highway 85, 21°11'N, 98°53'W, ca. 300 m, San Luis Potosí State, Mexico, 11 June 1983 (W. Maddison, R. S. Anderson), in MCZ. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange, cephalic area dusky. Chelicerae, labium, endites orange-brown. Sternum dusky orange. Coxae, legs orange, distal articles darker. Dorsum of abdomen with paired dark gray marks on orange-

gray (Fig. 124); venter uniformly dark gray. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.7 diameter apart, 1.4 diameters from laterals. Posterior median eyes 0.3 diameter apart. Posterior median eyes oval, the long diameter from median posterior, to lateral and anterior. Height of clypeus equals 0.6 diameter of anterior median eye. Total length 7.7 mm. Carapace 3.9 mm long, 3.0 wide, 1.6 behind lateral eyes. First femur 3.3 mm, patella and tibia 3.9, metatarsus 2.5, tarsus 1.1. Second patella and tibia 3.4 mm, third 2.1, fourth 3.1.

Diagnosis. This species has a thinner scape (Figs. 121–123) than does *M. paquisha* (Figs. 125–127), but the scape is rounded (Fig. 123) and the posterior median plate is wider (Fig. 122) than that of *M. paquisha* (Fig. 126).

Metazygia paquisha new species

Figures 125–128; Map 2H

Holotype. Female holotype from Alto Río Comaina, Puesto de Vigilancia 22, "Falso Paquisha," Cordillera del Condor, border with Ecuador, 05°02'S, 78°51'W, Depto. Amazonas, Peru, night collecting, 23 Oct. 1987 (D. Silva D.), in MUSM. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange, darkest anterior. Chelicerae orange. Labium, endites, sternum dusky orange. Legs dusky orange, darkest distally. Abdomen gray without marks (Fig. 128). Carapace with a median line of setae. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.6 diameter apart, 1.1 diameters from laterals. Posterior median eyes 0.3 diameter apart. Height of clypeus equals 0.6 diameter of anterior median eye. Total length 7.2 mm. Carapace 3.1 mm long, 2.3 wide, 1.3 behind lateral eyes. First femur 2.5 mm, patella and tibia 3.3, metatarsus 2.3, tarsus 0.9. Second patella and tibia 3.1 mm, third 2.1, fourth 2.5.

Illustration. Figures 125–128 were made from the holotype.

Diagnosis. The female differs from oth-

ers by the wide massive scape (Figs. 125–127) and from *M. taman* (Figs. 121–124) by the more pointed scape and narrower posterior plate (Figs. 126, 127).

Distribution. Amazon Region (Map 2H).

Specimen Examined. VENEZUELA Amazonas: Cerro de la Neblina, base camp, 140 m, 0°50'N, 66°10'W, low foliage, 21–28 Feb. 1985, 1♀ (W. E. Steiner, USNM).

Metazygia nobas new species

Figures 129–132; Map 2H

Holotype. Female holotype from Baños, 1,600 m, Tungurahua Prov., Ecuador, July 1938, and paratype from Baños, 2,000 m, July–Aug. 1938 (W. C. Macintyre), in MCZ. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace orange. Chelicerae, labium, endites orange-brown. Sternum dark orange. Legs orange. Dorsum of abdomen light with a faint folium and spots (Fig. 132); venter gray without marks. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.8 diameter apart, 1.7 diameters from laterals. Posterior median eyes 0.2 diameter apart, 2.5 diameters from laterals. Height of clypeus equals 0.6 diameter of anterior median eye. Total length 8.6 mm. Carapace 4.0 mm long, 2.9 wide, 1.9 behind lateral eyes. First femur 3.0 mm, patella and tibia 3.6, metatarsus 2.3, tarsus 1.1. Second patella and tibia 3.2 mm, third 2.2, fourth 2.9.

Diagnosis. The epigynum (Figs. 129–131) differs from that of the Mexican *M. taman* (Figs. 121–123) and the Colombian *M. chenevo* (Figs. 177–179) by having the median anterior edge of the base sclerotized (at 12 hr in Fig. 129) and the posterior median plate heart-shaped (Fig. 130). *Metazygia nobas* differs from *M. paquisha* (Fig. 126) in the wider posterior median plate (Fig. 130). The posterior margin of the epigynum base in ventral view has a notch on each side (at 7 hr and 5 hr in Fig. 129) resembling that of *M. voluptifica* (Fig. 280).

Metazygia goeldii new species
Figures 133–137; Map 2K

Holotype. Female holotype from Goeldi Museum, Belém, Est. Pará, Brazil, 10 Feb. 1959 (A. M. Nadler), in AMNH. The species is named after the Brazilian naturalist E. Göldi.

Description. Female holotype. Carapace orange. Chelicerae, labium, endites dark orange. Sternum orange. Coxae lightest orange, legs dusky orange. Dorsum of abdomen light with gray folium (Fig. 137); venter light dusky. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.6 diameter apart, 1.2 diameters from laterals. Posterior median eyes 0.2 diameter apart, 2 diameters from laterals. Height of clypeus equals 0.3 diameter of anterior median eye. Total length 6.0 mm. Carapace 2.8 mm long, 2.3 wide, 1.2 behind lateral eyes. First femur 2.4 mm, patella and tibia 2.9, metatarsus 2.0, tarsus 0.9. Second patella and tibia 2.5 mm, third 1.7, fourth 2.3.

Variation. Total length of females 4.7 to 6.0 mm. The shape of the scape in the two specimens differs (Figs. 133, 136). Illustrations (Figs. 133–135, 137) were made from the female holotype.

Diagnosis. The abdomen is oval, widest in anterior half (Fig. 137). *Metazygia goeldii* differs from others by the knob-shaped scape (Figs. 133–135), which appears curved in lateral view (Fig. 135).

Specimen Examined. BRAZIL Pará: Belém, Inst. Agron., 11 Feb. 1959, 1♀ (A. Nadler, AMNH).

Metazygia adisi new species
Figures 138–141; Map 2H

Holotype. Female holotype from Lago do José, Manaus, Amazonas State, Brazil, 9 Aug. 1987 (J. Adis et al.), in MCN no. 20058. The species is named after the collector.

Description. The female holotype has lost all white pigment including the silver tapetum; it apparently was collected in a preservative other than alcohol (Levi, 1989). The specimen is all orange, except for a black band around anterior of abdomen which is in the middle (Fig. 141). The eye region is black. Posterior median

eyes same diameter as anterior medians, laterals 0.7 diameter. Anterior median eyes 0.7 diameter apart, 0.5 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1 diameter from laterals. Height of clypeus equals 0.3 diameter of anterior median eye. Abdomen slightly flattened anteriorly (Fig. 141). Total length 3.7 mm. Carapace 1.8 mm long, 1.3 wide, 0.7 behind lateral eyes. First femur 1.9 mm, patella and tibia 2.5, metatarsus 1.8, tarsus 0.6. Second patella and tibia 2.1 mm, third 1.2, fourth 1.8.

Diagnosis. Unlike other species, *Metazygia adisi* has framed bulges on each side of the scape of the epigynum (Figs. 138, 139).

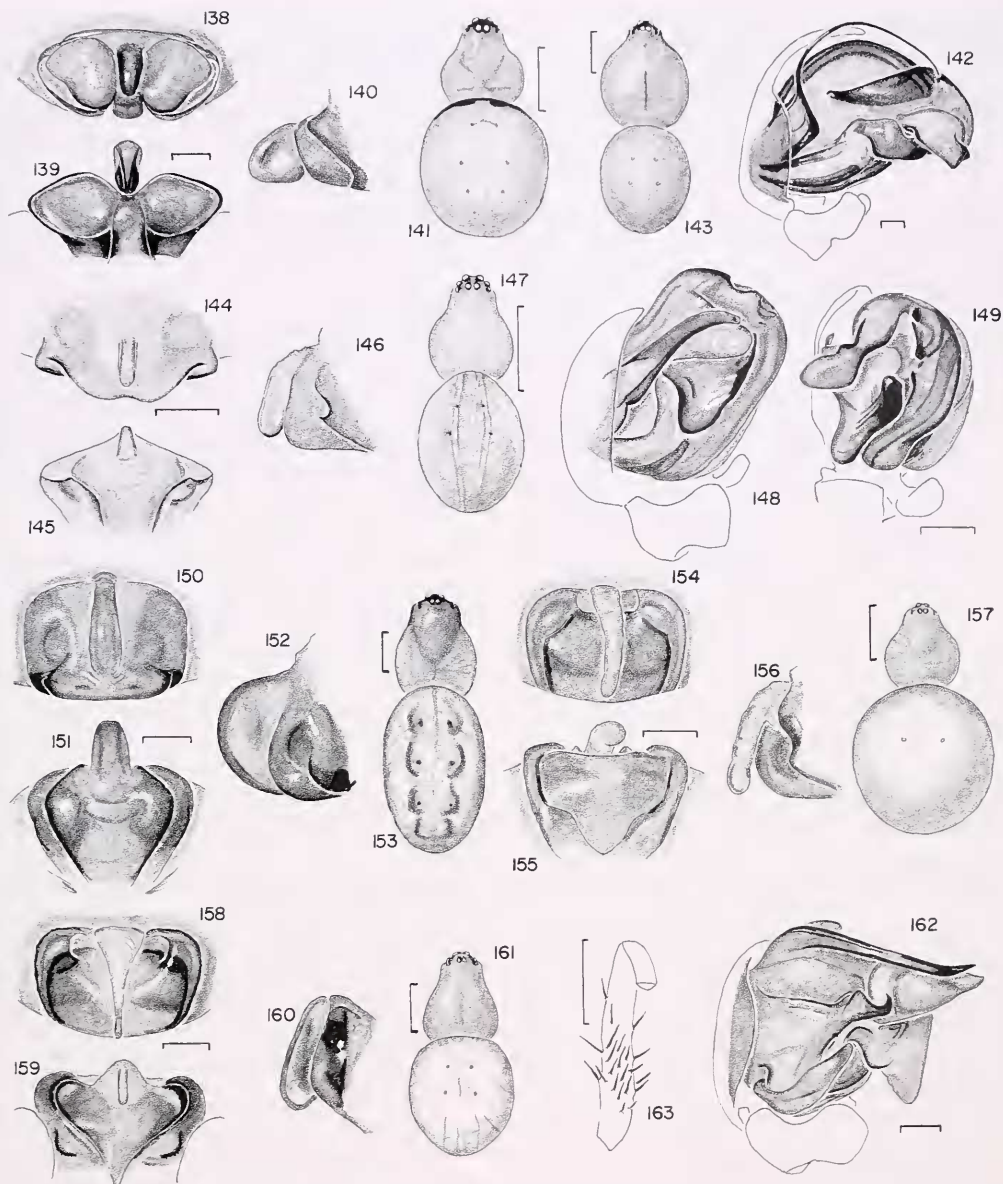
Metazygia arnoi new species
Figures 142, 143; Map 2H

Holotype. Male holotype from Morro dos Seis Lagos, Parque Nacional do Pico da Neblina, Est. Amazonas, Brazil, 3 Oct. 1990 (A. A. Lise), in MCP. The species is named after the collector.

Description. Male holotype. Carapace orange. Chelicerae orange. Labium, endites, orange. Sternum orange, slightly dusky. Coxae; legs orange. Dorsum of abdomen light gray with faint dusky marks, pairs of spots and outline of folium (Fig. 143); venter light gray. Carapace with median longitudinal line. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.6 diameter apart, 0.4 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.5 diameters from laterals. Height of clypeus equals 0.5 diameter of anterior median eye. Total length 5.1 mm. Carapace 2.6 mm long, 2.1 wide, behind lateral eyes 0.8 wide. First femur 2.4 mm, patella and tibia 2.7, metatarsus 2.0, tarsus 0.8. Second patella and tibia 2.3 mm, third 1.4, fourth 1.9.

Note. This might be the male of *M. paquisha*.

Diagnosis. The palpus (Fig. 142) lacks a terminal apophysis and differs from all others by the loop of the thread-shaped embolus (at 12 hr in Fig. 142).



Figures 138–141. *Metazygia adisi* n. sp., female. 138–140, epigynum. 138, ventral. 139, posterior. 140, lateral. 141, dorsal.

Figures 142, 143. *M. arnoi* n. sp., male. 142, left male palpus. 143, dorsal.

Figures 144–149. *M. curari* n. sp. 144–147, female. 144–146, epigynum. 144, ventral. 145, posterior. 146, lateral. 147, dorsal. 148, 149, male palpus. 148, mesal. 149, ventral.

Figures 150–153. *M. boliviana* n. sp., female. 150–152, epigynum. 150, ventral. 152, posterior. 152, lateral. 153, dorsal.

Figures 154–163. *M. yucumo* n. sp., 154–161, female. 154–156, 158–160, epigynum. 154, 158, ventral. 155, 159, posterior. 156, 160, lateral. 157, 161, dorsal. 154–157, (Colombia). 158–161, (Bolivia). 162, 163, male. 162, palpus. 163, left femur, subventral.

Scale lines. 1.0 mm, genitalia 0.1 mm.

Metazygia curari new species

Figures 144–149; Map 2H

Holotype. Female holotype from Ilha de Curari, Manaus, Est. Amazonas, Brazil, 3 Aug. 1987 (J. Adis et al.), in MCN no. 20055. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace yellowish white, little black between eyes. Chelicerae, labium, endites yellowish white. Sternum, legs yellowish white. Dorsum of abdomen with two longitudinal white lines on dusky white (Fig. 147); venter yellowish white. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 1.2 diameters apart, 0.4 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.3 diameters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 2.7 mm. Carapace 1.25 mm long, 0.97 wide, 0.49 behind lateral eyes. First femur 1.38 mm, patella and tibia 1.61, metatarsus 1.11, tarsus 0.49. Second patella and tibia 1.32 mm, third 0.82, fourth 1.28.

Male. Color as in female but distal articles of legs dusky. Posterior median eyes 0.9 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.4 diameter apart, 0.2 diameter from laterals. Posterior median eyes 0.1 diameter apart, 1.2 diameters from laterals. Height of clypeus equals 0.6 diameter of anterior median eye. Endite with pointed tooth. Second tibia thicker than first, proximally swollen with macrosetae. Total length 2.5 mm. Carapace 1.32 mm long, 1.05 wide, 0.66 behind lateral eyes. First femur 1.30 mm, patella and tibia 1.61, metatarsus 1.13, tarsus 0.59. Second patella and tibia 1.32 mm, third 0.84, fourth 1.09.

Note. Males and females were matched because both have similar median white lines on the abdomen and little black pigment between eyes. Their collecting localities are within 10 km of each other. A recently collected female had a green abdomen.

Diagnosis. The pair of longitudinal white lines on the abdomen (Fig. 147) is a distinctive character. In ventral view of

the epigynum, the median plate overlaps the lateral plates along their posterior margins (at 8 hr, and at 4 hr in Fig. 144). The palpus lacks a terminal apophysis and the embolus has a distinctive shape (Fig. 148).

Specimens Examined. BRAZIL *Amazonas:* Manaus, Canal Januari, mixed water forest, 16, 17 June 1987, 1♂ (H. Höfer, INPA); Ilha de Marchantaria, Rio Solimões, 3°15'S, 59°58'W, 2 Sept. 1992, 1♀ (J. Adis et al., INPA).

Metazygia bolivia new species

Figures 150–153; Map 2F

Holotype. Female holotype from Est. Biológico Beni, Zone 3, ca. 14°47'S, 66°15'W, ca. 225 m, Depto. Beni, Bolivia, 8–14 Nov. 1989 (J. Coddington, S. Larcher, C. Griswold, D. Silva D., E. Pañaranda), in IELP. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange, sides of thoracic region lightest. Chelicerae orange-brown. Labium, endites dark orange. Sternum orange. Coxae light orange, legs dusky orange. Dorsum of abdomen with white pigment spots and pairs of gray brackets (Fig. 153); venter light gray. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.8 diameter apart, 1.3 diameters from laterals. Posterior median eyes 0.4 diameter apart. Height of clypeus equals 0.3 diameter of anterior median eye. Total length 6.7 mm. Carapace 3.0 mm long, 2.0 wide, 1.5 behind lateral eyes. First femur 2.2 mm, patella and tibia 2.5, metatarsus 1.8, tarsus 0.8. Second patella and tibia 2.3 mm, third 1.5, fourth 2.0.

Diagnosis. The elongate abdomen (Fig. 153) suggests that this species may belong to another genus, as yet unnamed, whose species have a cylindrical abdomen. However, the epigynum is of the characteristic shape found in *Metazygia*, although the flat scape is larger than in other species (Figs. 150–152).

Metazygia yucumo new species

Figures 154–163; Map 2K

Holotype. Female holotype, female and male paratypes from 26.9 km SW Yucumo, 500 m, ca. 15°23'S, 66°59'W, Depto. Beni, Bolivia, 15–19 Nov. 1989 (J.

Coddington, C. Griswold, D. Silva D., S. Larcher, E. Pañaranda), in USNM. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace light orange-yellow. Chelicerae, labium, endites orange-yellow. Sternum, coxae orange-yellow. Legs orange-yellow, except distal half of first femora with brown ring, underside black, and first two tibiae and distal articles brown, underside darker. Dorsum of abdomen white without pattern (Figs. 157, 161); venter light gray. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes their diameter apart, 0.7 diameter from laterals. Posterior median eyes 0.3 diameter apart, 2 diameters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 4.2 mm. Carapace 2.0 mm long, 1.4 wide, 0.8 behind lateral eyes. First femur 2.3 mm, patella and tibia 2.7, metatarsus 1.8, tarsus 0.7. Second patella and tibia 2.2 mm, third 1.1, fourth 1.8.

Male. Color as in female. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes their diameter apart, 0.5 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1 diameter from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. First femur with many macrosetae (Fig. 163). Total length 4.2 mm. Carapace 1.9 mm long, 1.3 wide, 0.6 behind lateral eyes. First femur 2.3 mm, patella and tibia 2.9, metatarsus 2.3, tarsus 0.9. Second patella and tibia 2.3 mm, third 1.1, fourth 1.7.

Note. Males and females were collected together.

Variation. Total length of females 3.7 to 4.5 mm. The openings of the epigynum may be indistinct and hard to see (Fig. 154); some have a lip laterally (Fig. 158). Illustrations were made from the female holotype (Figs. 158–161) and a female from Mitú, Colombia (Figs. 154–157), and the male paratype.

Diagnosis. The female is separated from others by the epigynum, which has an indistinct pair of anterior median openings

on each side of a thin scape (at 11 hr and at 1 hr in Figs. 154, 158). The male has a brush of ventral setae on the underside of the femur (Fig. 163), and the tip of the embolus is hook-shaped (Fig. 162).

Distribution. Upper Amazon region (Map 2K).

Specimens Examined. COLOMBIA *Vaupés*: Mitú, 200 m, Feb. 1975, 1♀ (P. A. Schneble, MCZ). PERU *Huánuco*: Divisoria, 1,700 m, 23 Sept. to 3 Oct. 1946, 1♀ (F. Woytkowski, AMNH). *Madre de Dios*: El Limonal, Alto Río Madre de Dios, 21 July 1988, night collecting, 1♀ (P. Lozada, MUSM).

Metazygia ipanga new species Figures 164–167; Map 2K

Holotype. Female holotype from Museum Park, Ipiranga, São Paulo, Est. São Paulo, Brazil, 6 Dec. 1960 (J. Luiz), in MZSP no. 7642. The specific name is an arbitrary combination of letters.

Note. Ipiranga is the district of the city of São Paulo in which the MZSP is located.

Description. Female holotype. Cephalothorax very light orange, only eyes with black pigment. Dorsum of abdomen whitish with faint black band around anterior (Fig. 167). Venter whitish without pigment. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes 0.7 diameter apart, 0.5 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1 diameter from laterals. Height of clypeus equals 0.3 diameter of anterior median eye. Total length 4.5 mm. Carapace 1.9 mm long, 1.4 wide, 0.8 behind lateral eyes. First femur 2.2 mm, patella and tibia 2.5, metatarsus 2.0, tarsus 0.6. Second patella and tibia 2.0 mm, third 1.2, fourth 1.8.

Variation. The holotype lacks white pigment; it appears washed out by the preserving fluid (Levi, 1989). The specimen from the Chaco Prov., Argentina, had both sides of the abdomen white and white pigment spots anterior to the black band. The Bolivian specimen had black pigment between the eyes and a square white pigment area on the venter of the abdomen. The holotype was illustrated.

Diagnosis. The abdomen is spherical (Fig. 167). This species differs from *M.*

urarioera by the shape of the posterior median plate of the epigynum (Fig. 165).

Distribution. São Paulo State, northern Argentina to Bolivia (Map 2K).

Specimens Examined. BOLIVIA *Beni*: Est. Biol. Beni, 14°47'S, 66°15'W, ca. 225 m, 8–14 Nov. 1989, 1♀ (J. Coddington et al., USNM). ARGENTINA *Chaco*: Selvas del Río Oro, 27 Jan. 1965, 1♀ (M. E. Galiano, MEG).

***Metazygia urarioera* new species**
Figures 168–171; Map 2K

Holotype. Female holotype from Ilha de Maracá, Rio Urarioera, Est. Roraima, Brazil, 20 Mar. 1987 (A. A. Lise), in MCN no. 20064. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange, eye region black. Chelicerae dark orange. Labium, endites dark orange. Sternum orange. Legs orange. First femur with a distal black spot on underside, distal end of first tibia dark. Dorsum of abdomen white with an anterior pair of black spots (Fig. 171). Venter with a white longitudinal band, starting at the side of book-lung covers. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.3 diameter apart, 0.2 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1.5 diameters from laterals. Height of clypeus equals 0.3 diameter of anterior median eye. All patellae with a posterior, blunt tubercle. Total length 3.1 mm. Carapace 1.4 mm long, 1.1 wide, 0.5 behind lateral eyes. First femur 1.4 mm, patella and tibia 1.6, metatarsus 1.2, tarsus 0.5. Second patella and tibia 1.3 mm, third 0.8, fourth 1.1.

Variation. Total length of females 3.1 to 4.4 mm. The specimen from Surinam had the epigynum slightly shorter in pos-

terior view and the abdomen more elongate. Illustrations were made from the holotype.

Diagnosis. The epigynum of this species, unlike that of others, has a sclerotized notch anteriorly on each side (at 10 hr and at 2 hr in Fig. 168) and a long narrow posterior median plate (Fig. 169).

Natural History. The specimen collected in Guyana came from forest savanna.

Distribution. Guianas to northern Brazil (Map 2K).

Specimens Examined. GUYANA Canje River, Iku-ruwa, 5°50'N, 57°50'W, Aug.–Sept. 1961, 1♀ (G. Bentley, AMNH). SURINAM *Marowijne*: Lawn River, Anapaiké Village, Nov. 1963, 1♀ (B. Malkin, AMNH). BRAZIL *Amazonas*: Morro dos Seis Lagos, Parque Nacional do Pico da Neblina, 5 Oct. 1990, 1♀ (A. A. Lise, MCP).

***Metazygia serian* new species**
Figures 172–176; Map 2I

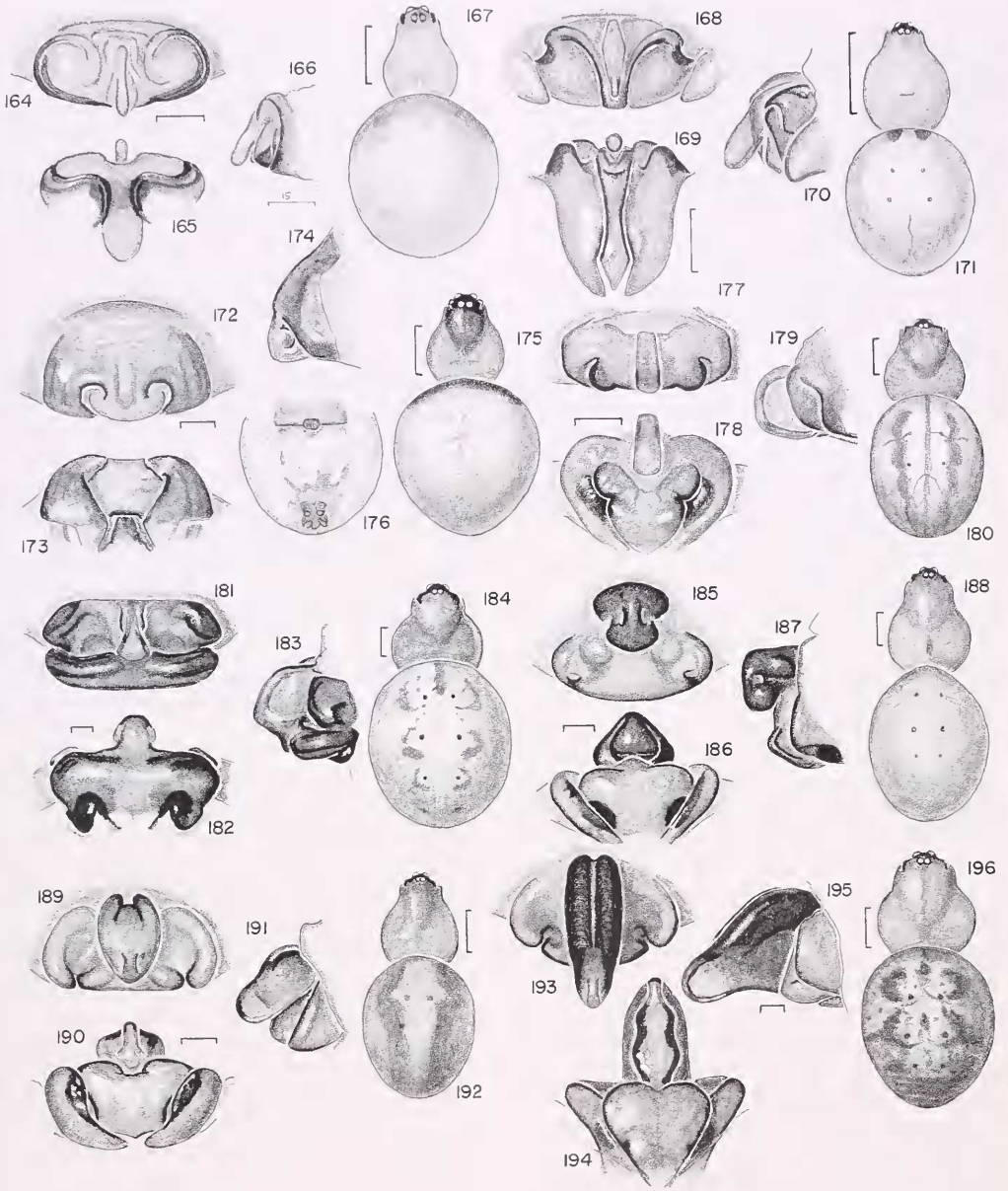
Holotype. Female holotype from La Selva, 4 km SE of Puerto Viejo, Heredia Prov., Costa Rica, 7 Aug. 1980, probably from wasp nest (R. Coville), in MCZ. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace orange, cephalic region brown, eye region black. Chelicerae dark brown to black. Labium, endites brown. Sternum orange. Coxae, legs orange. Dorsum of abdomen with dense white pigment spots and transverse black band around anterior (Fig. 175). Venter white with a large white square between epigynum and spinnerets (Fig. 176). Posterior median eyes 0.9 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.8 diameter apart, 0.3 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.2 diameters from laterals. Height of

Figures 164–167. *M. ipanga* n. sp., female. 164–166, epigynum. 164, ventral. 165, posterior. 166, lateral. 167, dorsal.

Figures 168–171. *M. urarioera* n. sp., female. 168–170, epigynum. 168, ventral. 169, posterior. 170, lateral. 171, dorsal.

Figures 172–176. *M. serian* n. sp., female. 172–174, epigynum. 172, ventral. 173, posterior. 174, lateral. 175, dorsal. 176, abdomen, ventral.



Figures 177–180. *M. chenevo* n. sp., female. 177–179, epigynum. 177, ventral. 178, posterior. 179, lateral. 180, dorsal.

Figures 181–184. *M. lazepa* n. sp., female. 181–183, epigynum. 181, ventral. 182, posterior. 183, lateral. 184, dorsal.

Figures 185–188. *M. atalaya* n. sp., female. 185–187, epigynum. 185, ventral. 186, posterior. 187, lateral. 188, dorsal.

Figures 189–192. *M. corima* n. sp., female. 189–191, epigynum. 189, ventral. 190, posterior. 191, lateral. 192, dorsal.

Figures 193–196. *M. uratron* n. sp., female. 193–195, epigynum. 193, ventral. 194, posterior. 195, lateral. 196, dorsal.

Scale lines. 1.0 mm, genitalia 0.1 mm.

clypeus equals 0.7 diameter of anterior median eye. Total length 5.0 mm. Carapace 1.8 mm long, 1.5 wide, 0.9 behind lateral eyes. First femur 2.2 mm, patella and tibia 2.6, metatarsus 1.8, tarsus 0.6. Second patella and tibia 2.2 mm, third 1.2, fourth 1.9.

Variation. Total length of females 4.8 to 5.0 mm. Living specimens are green (Eberhard, in letter). Illustrations were made from the holotype.

Diagnosis. The abdomen is subspherical, widest in anterior half (Fig. 175). This species resembles the tetragnathid genus *Chrysometa* in general appearance and epigynum (but not the coloration). In ventral view, the epigynum has openings close to the posterior margin (Fig. 172), unlike any other *Metazygia* species.

Paratype. COSTA RICA *Heredia*: La Selva, Jan. 1978, 1♀ (W. Eberhard no. 1279, MCZ).

Metazygia chenevo new species

Figures 177–180; Map 3A

Holotype. Female holotype from Finca Chenevo, 175 m elev., 20 km S El Porvenir, 20 km N Río Muco, Depto. Meta, Colombia, 1978 (W. Eberhard, no. 1386), in MCZ. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange, cephalic region darkest. Chelicerae orange-brown. Labium, endites orange. Sternum orange. Coxae lighter orange, legs dusky orange. Dorsum of abdomen with three longitudinal dusky bands on white (Fig. 180), sides and venter gray. Posterior median eyes 0.6 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.8 diameter apart, 1.5 diameters from laterals. Posterior median eyes 0.2 diameter apart, 3 diameters from laterals. Height of clypeus equals 0.5 diameter of anterior median eye. Total length 6.0 mm. Carapace 2.9 mm long, 2.2 wide, 1.3 behind lateral eyes. First femur 2.7 mm, patella and tibia 3.1, metatarsus 2.1, tarsus 0.9. Second patella and tibia 2.7 mm, third 1.7, fourth 2.2.

Diagnosis. Unlike the Ecuadorian *M.*

nobas (Fig. 130), the posterior median plate of the epigynum has a lateral constriction in posterior view (Fig. 178).

Distribution. Amazon drainage, Colombia to Guyana (Map 3A).

Specimen Examined. GUYANA Rupununi Savanna, swamp, Sept.–Oct. 1989, 1♀ (S. Djojosedharmo, F. Mees, CD).

Metazygia lazepa new species

Figures 181–184; Map 3A

Holotype. Female holotype from Hacienda Mozambique, 15 km SW Puerto Lopez, 200 m, Depto. Meta, Colombia, Aug. 1978 (W. Eberhard, no. 1812), in MCZ. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace orange, cephalic region orange-brown. Chelicerae brown. Labium, endites orange brown. Sternum, coxae orange; legs dark orange. Dorsum of abdomen light gray with pairs of gray brackets (Fig. 184); venter gray without markings. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.5 diameter apart, 1 diameter from laterals. Posterior median eyes 0.2 diameter apart, 2.5 diameters from laterals. Height of clypeus equals 0.6 diameter of anterior median eye. Total length 8.8 mm. Carapace 3.8 mm long, 3.1 wide, 2.0 behind lateral eyes. First femur 3.4 mm, patella and tibia 3.9, metatarsus 2.9, tarsus 1.2. Second patella and tibia 3.4 mm, third 2.1, fourth 3.1.

Diagnosis. Unlike other *Metazygia*, the posterior plate of the epigynum is wide and completely covers the lateral plates (Figs. 181, 182). The holotype was illustrated.

Distribution. Colombia, Venezuela (Map 3A).

Specimen Examined. VENEZUELA *Carabobo*: San Esteban, 26 Jan. 1940, 1♀ (P. Andruze, AMNH).

Metazygia atalaya new species

Figures 185–188; Map 3A

Holotype. Female holotype from Atalaya, Río Carabón, night collecting, Depto. Cuzco, Peru, 23 Sept.

1987 (D. Silva D.), in MUSM. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange. Chelicerae, labium, endites dark orange. Sternum orange. Legs dusky orange. Abdomen gray without any marks (Fig. 188). Posterior median eyes 0.7 diameter of anterior medians, anterior laterals 0.7 diameter, posterior 0.6. Anterior median eyes 0.7 diameter apart, 1.1 diameters from laterals. Posterior median eyes 0.2 diameter apart. Posterior median eyes slightly oval. Height of clypeus equals 0.3 diameter of anterior median eye. The abdomen is slightly pointed anteriorly (Fig. 188). Total length 7.5 mm. Carapace 3.2 mm long, 2.4 wide, 1.4 behind lateral eyes. First femur 2.9 mm, patella and tibia 3.4, metatarsus 2.5, tarsus 1.2. Second patella and tibia 3.1 mm, third 1.9, fourth 2.7.

Diagnosis. The abdomen is slightly pointed anteriorly (Fig. 188). The epigynum of this species differs from that of others by the unusual shape of the scape (Figs. 185–187).

Metazygia corima new species

Figures 189–192; Map 3B

Holotype. Female holotype from Carimagua, 100 m, Depto. Meta, Colombia, grass, brush along fence, Oct. 1973 (W. Eberhard), in MCZ. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace orange, cephalic region brown. Chelicerae brown. Labium, endites orange. Sternum dark orange. Coxae, legs orange. Dorsum of abdomen with a median longitudinal light band that is bordered by darker ones (Fig. 192). Sides, venter gray. Posterior median eyes 0.7 diameter of anterior medians, anterior laterals 0.7 diameter, posterior 0.6. Anterior median eyes 0.6 diameter apart, 1 diameter from laterals. Posterior median eyes 0.4 diameter apart, 2 diameters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 5.5 mm. Carapace 2.7 mm long, 1.7 wide, 1.1 wide behind lateral eyes. First femur 2.3 mm, pa-

tella and tibia 2.7, metatarsus 1.9, tarsus 0.8. Second patella and tibia 2.4 mm, third 1.5, fourth 2.1.

Diagnosis. The epigynum and scape resembles that of *Araneus tiganus* (Chamberlin) (Levi, 1991a, figs. 9–11); the scape is oval in ventral view (Fig. 189).

Metazygia uratron new species

Figures 193–196; Map 3A

Holotype. Female holotype from Fazenda Santo Antonio, Uruçuca, Bahia, Brazil, 24 Oct. 1978 (J. S. Santos), in MCN no. 1097. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace orange. Chelicerae dark orange. Labium, endites orange. Sternum light orange, with irregular dusky spots. Coxae light orange, legs orange. Dorsum of abdomen dusky with darker gray folium outline (Fig. 196). Venter gray without marks. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.7 diameter apart, 1.5 diameters from laterals. Posterior median eyes 0.2 diameter apart. Height of clypeus equals 0.3 diameter of anterior median eye. Total length 7.0 mm. Carapace 3.4 mm long, 2.5 wide, 1.5 behind lateral eyes. First femur 3.1 mm, patella and tibia 3.3, metatarsus 2.3, tarsus 1.1. Second patella and tibia 2.7 mm, third 1.9, fourth 2.7.

Diagnosis. This species differs from other *Metazygia* by the shape of the large scape (Figs. 193–195).

Metazygia saturnino new species

Figures 197–202; Map 3A

Holotype. Male holotype and immature male from Barragem Saturnino de Brito, Santa Maria, Rio Grande do Sul, Brazil, 7 July 1982 (M. Rosenau), in MCN no. 10596. The specific name is a noun in apposition after the type locality.

Description. Female from Rio Grande, Rio Grande do Sul. Carapace with cephalic region brown, thoracic region light orange. Chelicerae brown. Labium, endites, brown. Sternum dusky orange. Coxae light orange; legs orange to brown, first two legs

and distal articles darkest. Dorsum of abdomen with gray pattern on light gray (Fig. 200); venter light gray. Posterior median eyes 0.6 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.7 diameter apart, 0.7 diameter from laterals. Posterior median eyes 0.3 diameter apart. Height of clypeus equals 0.6 diameter of anterior median eye. Total length 5.3 mm. Carapace 2.5 mm long, 2.1 wide, 1.2 behind lateral eyes. First femur 2.1 mm, patella and tibia 2.5, metatarsus 1.7, tarsus 0.8. Second patella and tibia 2.3 mm, third 1.3, fourth 1.8.

Male holotype. Color as in female but sternum and coxae are both orange. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.7 diameter apart, 0.7 diameter from laterals. Posterior median eyes 0.2 diameter apart, 2 diameters from laterals. Height of clypeus equals 0.7 diameter of anterior median eye. First coxa with minute hook. Second tibia as thick as first. Total length 4.5 mm. Carapace 2.3 mm long, 1.9 wide, 0.8 wide behind lateral eyes. First femur 2.7 mm, patella and tibia 3.3, metatarsus 2.5, tarsus 1.1. Second patella and tibia 2.8 mm, third 1.4, fourth 1.9.

Note. Males and females were matched because of similar size and dark cephalic region of carapace.

Variation. The epigynum of the female is probably broken off (Figs. 197–199).

Diagnosis. The base of the epigynum appears broken. The epigynum has a long, wide posterior median plate (Fig. 198). The male differs from that of *M. crabroniphila* (Fig. 207) by the shape of the conductor and the much larger radix (Fig. 201).

Specimen Examined. BRAZIL *Rio Grande do Sul:* Rio Grande, Est. Ecológica do Taim, 15 Oct. 1985, 1♀ (H. Buckup, MCN 13559).

Metazygia crabroniphila Strand
Figures 203–207; Map 3B

Aranea (Metazygia) crabroniphila Strand, 1915: 117. Female and male syntypes from Joinville, Est. Santa Catarina, Brazil, in SMF, examined.

Metazygia crabroniphila:—Roewer, 1942: 867. Bonnet, 1957: 2819.

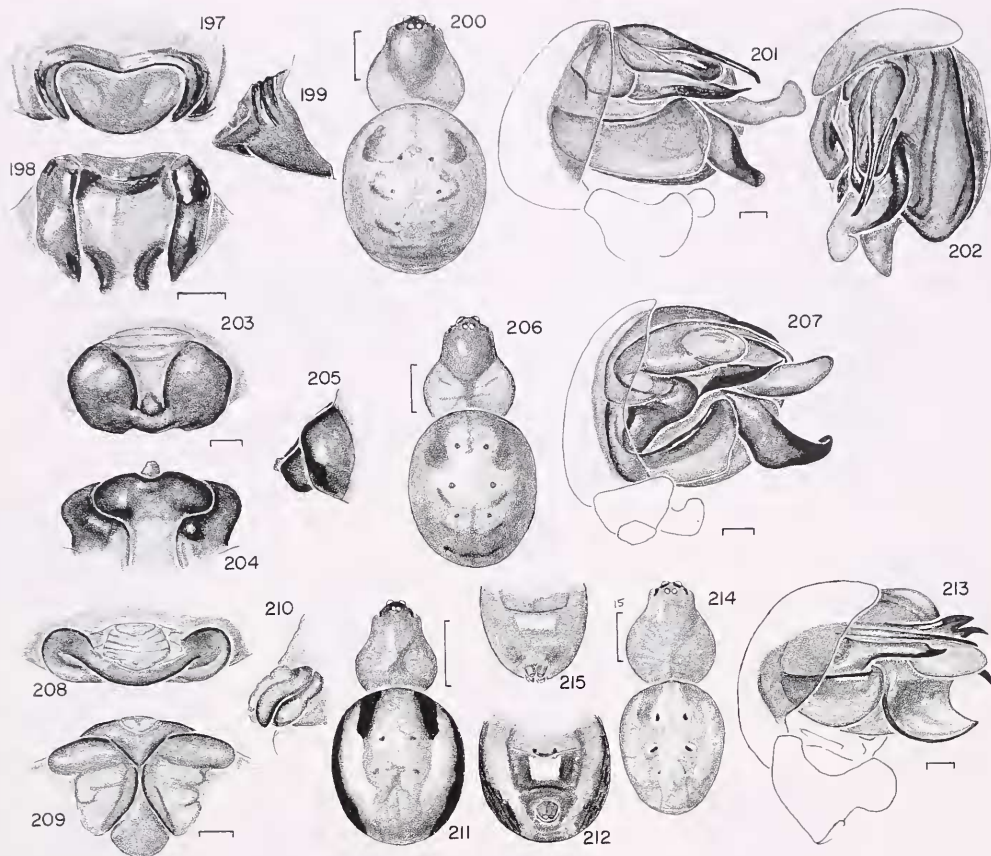
Description. Female from Jurubatuba, Est. São Paulo. Carapace light orange, cephalic region orange. Chelicerae brown. Labium, endites dark orange. Sternum orange. Coxae light orange; legs orange, distal articles darker. Dorsum of abdomen with a pair of anterior dusky patches and pairs of diagonal marks (Fig. 206); venter light, without marks. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.8 diameter apart, 1 diameter from laterals. Posterior median eyes 0.3 diameter apart. Height of clypeus equals 0.6 diameter of anterior median eye. Total length 5.5 mm. Carapace 2.4 mm long, 1.8 wide, 1.1 wide behind lateral eyes. First femur 2.1 mm, patella and tibia 2.6, metatarsus 1.6, tarsus 0.5. Second patella and tibia 2.3 mm, third 1.3, fourth 1.8.

Male from Pinhal, Santa Catarina, Brazil. Color as in female. Posterior median eyes 0.8 diameter of anterior medians, anterior laterals 0.8 diameter, posterior laterals 0.6. Anterior median eyes 0.8 diameter apart, 0.6 diameter from laterals. Posterior median eyes 0.3 diameter apart. Height of clypeus equals 0.6 diameter of anterior median eye. First coxa without hook. Total length 4.0 mm. Carapace 2.5 mm long, 1.8 wide, 0.9 wide behind lateral eyes. First femur 2.4 mm, patella and tibia 3.1, metatarsus 2.2, tarsus 0.9. Second patella and tibia 2.7 mm, third 1.3, fourth 1.8.

Variation. Total length of females 4.5 to 8.0 mm, males 4.0 to 4.3. It is uncertain whether the scape of the epigynum is torn off in all examined or is a minute bulge (Fig. 203). Illustrations were made from a female and male from Pinhal. The dorsal view is of a female from Jurubatuba.

Diagnosis. The female can be separated from others by the two oval sclerotized plates of the epigynum (Fig. 203). The male can be distinguished from *M. saturnino* by having a straight conductor (at 3 hr in Fig. 207) and a longer median apophysis (at 4 hr and at 5 hr in Fig. 207).

Natural History. Most examined spec-



Figures 197–202. *Metazygia saturnino* n. sp. 197–200, female. 197–199, epigynum. 197, ventral. 198, posterior. 199, lateral. 200, dorsal. 201, 202, left male palpus. 201, mesal. 202, apical.

Figures 203–207. *M. crabroniphila* Strand. 203–206, female. 203–205, epigynum. 203, ventral. 204, posterior. 205, lateral. 206, dorsal. 207, male palpus.

Figures 208–212. *M. matanzas* n. sp., female. 208–210, epigynum. 208, ventral. 209, posterior. 210, lateral. 211, dorsal. 212, abdomen, ventral.

Figures 213–215. *M. corumba* n. sp., male. 213, palpus. 214, dorsal. 215, abdomen, ventral.

Scale lines. 1.0 mm, genitalia 0.1 mm.

imens are in poor condition and may all have come from wasp nests.

Specimens Examined. BRAZIL São Paulo: Juruatuba, 6 July 1941, 1♀ (F. Lane, MZSP 9630); Jardim Botânico, Agua Funda, 7 July 1962, 1♀, 1♂ (A. F. Archer, AMNH). Paraná: Curitiba, 2 Feb. 1988, 3♂ (D. H. Habeck, FSCA). Santa Catarina: Pinhal, Dec. 1947, 7♀, 1♂; Jan. 1948, 1♀; Dec. 1948, 2♀, 1♂; Jan. 1949, 3♀ (A. Maller, AMNH).

Metazygia matanzas new species
Figures 208–212; Map 2J

Holotype. Female holotype from Pan de Palenque, Matanzas, Cuba, 11 Aug. 1955 (A. F. Archer), in AMNH. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace dusky orange, darkest in eye region.

Chelicerae, labium, endites dusky orange. Sternum orange with sides black. Coxae orange, legs dusky orange. Dorsum of abdomen with black bands on sides, bordered by white bands, and an indistinct dusky folium containing anterior black marks (Fig. 211). Venter with white patch on black (Fig. 212). Posterior median eyes 0.8 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.8 diameter apart, 0.6 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1.7 diameters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 3.9 mm. Carapace 1.6 mm long, 1.2 wide, 0.7 wide behind lateral eyes. First femur 1.4 mm, patella and tibia 1.8, metatarsus 1.1, tarsus 0.7. Second patella and tibia 1.5 mm, third 0.9, fourth 1.2.

Diagnosis. This species may belong to *Araneus* because it has an annulate, flat, round scape (Fig. 208). It is placed here because of the shape of the abdomen and the position of the posterior median eyes (Fig. 211).

Metazygia corumba new species
Figures 213–215; Map 3B

Holotype. Male holotype and male paratype (with one female of *M. voluptifica*) from Corumbá, Mato Grosso do Sul, Brazil, 28–29 May 1960 (B. Malkin), in AMNH. The specific name is a noun in apposition after the type locality.

Description. Male holotype. Cephalothorax orange. Dorsum of abdomen white with sides dusky. Venter with white patch behind genital groove (Fig. 215). Posterior median eyes 0.8 diameter of anterior medians, anterior laterals 0.8 diameter, posterior laterals 0.7. Anterior median eyes 0.6 diameter apart, 0.6 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.7 diameters from laterals. Height of clypeus equals 0.5 diameter of anterior median eye. Endite without tooth. First coxa with small hook. Total length 5.2 mm. Carapace 2.5 mm long, 2.0 wide, 1.0 wide behind lateral eyes. First femur 2.6 mm, patella and tibia 3.2, metatarsus 2.4, tarsus

0.9. Second patella and tibia 2.7 mm, third 1.5, fourth 2.0.

Note. The two males from Corumbá were collected with a female of *M. munda*.

Variation. Total length of males 3.7 to 5.2 mm. Illustrations were made from the holotype.

Diagnosis. This species differs from *M. crabroniphila* by having the two edges of the embolus straight and parallel (Fig. 213).

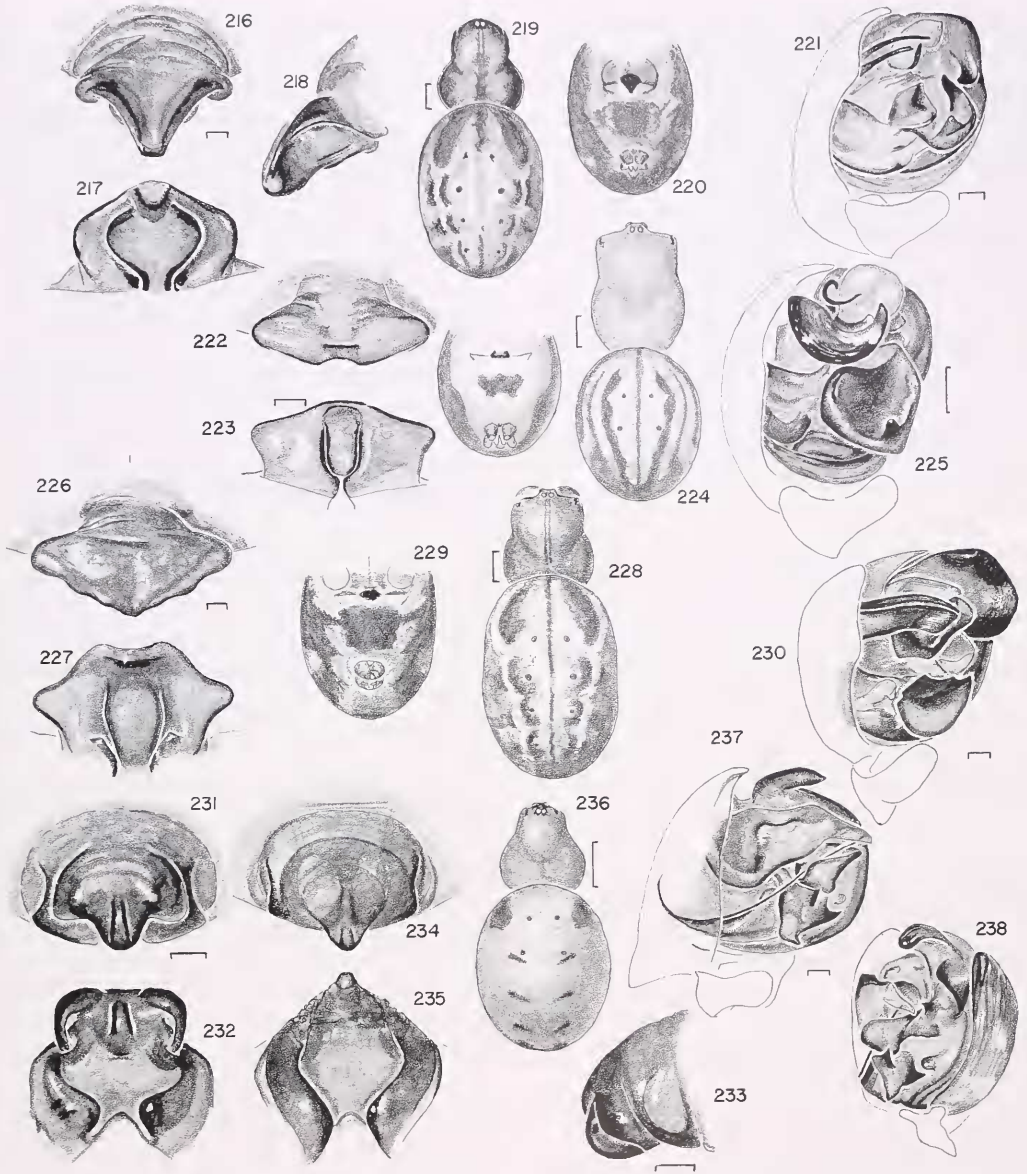
Specimen Examined. BOLIVIA Santa Cruz: Mataral, 14 Dec. 1984, 1♂ (L. Peña, AMNH).

Metazygia sendero new species
Figures 216–221; Map 3B

Holotype. Female holotype from Sendero Campamento, Laguna Grande, PUCE Field Station, Reserva Faunística Cuyabeno, 00°00'N, 76°10–11'W, 31 July to 5 Aug. 1988, Sucumbios Prov., Ecuador, 31 July to 5 Aug. 1988 (W. Maddison), in MECN. The specific name is a noun in apposition after the type locality; sendero is the Spanish word for path.

Description. Female holotype. Carapace orange and black. Chelicerae brownish black. Labium, endites brown. Sternum brown. Coxae dusky orange, legs dark orange-brown. Dorsum of abdomen with a series of pairs of black brackets (Fig. 219). Venter with a black square (Fig. 220). Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.5 diameter apart, 2.2 diameters from laterals. Posterior median eyes 0.2 diameter apart. Height of clypeus equals 0.5 diameter of anterior median eye. Total length 11.0 mm. Carapace 4.6 mm long, 3.2 wide, 2.5 behind lateral eyes. First femur 3.5 mm, patella and tibia 4.5, metatarsus 3.1, tarsus 1.4. Second patella and tibia 3.9 mm, third 2.2, fourth 3.4.

Male. Coloration as in female, but venter of abdomen with scattered white pigment spots. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.4 diameter apart, 1.6 diameters from laterals. Posterior median eyes 0.4 diameter apart, 3.5 diameters from laterals. Height of clypeus equals 0.7 diameter of anterior



Figures 216–221. *Metazygia sendero* n. sp. 216–220, female. 216–218, epigynum. 216, ventral. 217, posterior. 218, lateral. 219, dorsal. 220, abdomen, ventral. 221, left male palpus.

Figures 222–225. *M. uma* n. sp. 222–224, female. 222, 223, epigynum. 222, ventral. 223, posterior. 224, right, dorsal; left, abdomen, ventral. 225, male palpus.

Figures 226–230. *M. laticeps* (O. P.-Cambridge). 226–229, female. 226–228, epigynum. 226, ventral. 227, posterior. 228, dorsal. 229, abdomen, ventral. 230, male palpus.

Figures 231–238. *M. mundulella* Strand. 231–236, female. 231–235, epigynum. 231, ventral. 232, posterior. 233, lateral. 234, broken ventral. 235, broken posterior. 236, dorsal. 237, 238, palpus. 237, mesal. 238, ventral.

Scale lines. 1.0 mm, genitalia 0.1 mm.

median eye. Total length 6.5 mm. Carapace 3.2 mm long, 2.3 wide, 1.5 behind lateral eyes. First femur 2.5 mm, patella and tibia 3.1, metatarsus 2.3, tarsus 1.2. Second patella and tibia 2.7 mm, third 1.5, fourth 2.1.

Note. Males and females were matched because of similar coloration, a similar wide cephalic region and swelling behind the eyes, and similarly shaped abdomen. The only other species with these characters is *M. laticeps*. Male and female come from the opposite slopes of the Andes.

Variation. Total length of females 8.0 to 11.0 mm. Illustrations were made from the female holotype and a male from Tinalandia, Ecuador.

Diagnosis. The abdomen is elongate, oval, slightly overhanging spinnerets (Fig. 220). This species differs from *M. laticeps* by having the epigynum with a narrower triangle in ventral view (Fig. 216); in posterior view, the median plate is as wide as long (Fig. 217) while that of *M. laticeps* is narrow (Fig. 227). The median apophysis of the palpus (at 4 hr in Fig. 221) has two tips.

Distribution. Ecuador, Peru (Map 3B).

Specimens Examined. ECUADOR *Pichincha*: Tinalandia, 12 km E Santo Domingo de los Colorados, 750 m, beating vegetation, 11–17 May 1986, 1 imm., 1♀, 2♂ (G. B. Edwards, FSCA). PERU *Ucayali*: Colonia Calleria, Río Calleria, 15 km from Ucayali, 10–30 Sept. 1961, 1♀ (B. Malkin, AMNH).

Metazygia uma new species

Figures 222–225; Map 3B

Holotype. Female holotype from Puesto de Vigilancia Pakitza, Zona Reservada de Manu, Depto. Madre de Dios, 11°58'S, 71°18'W, Peru, inundated forest, 30 Sept. 1987 (D. Silva D., J. Coddington), in MUSM. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace orange. Chelicerae, labium, endites orange. Sternum orange. Coxae orange; legs orange but distal tips of tibiae, metatarsi and tarsi black. Dorsum of abdomen with longitudinal gray lines (Fig. 224); venter with a black rectangle (Fig. 225).

Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.5 diameter apart, 3 diameters from laterals. Posterior median eyes 0.4 diameter apart. Height of clypeus equals 0.6 diameter of anterior median eye. Total length 8.2 mm. Carapace 3.8 mm long, 2.5 wide, 2.3 behind lateral eyes. First femur 2.6 mm, patella and tibia 3.4, metatarsus 2.3, tarsus 1.1. Second patella and tibia 2.9 mm, third 1.7, fourth 2.7.

Male. Coloration as in female, but venter of abdomen all black. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.5. Anterior median eyes 0.8 diameter apart. Posterior median eyes 0.3 diameter apart. Coxal hook very small. Second tibia thicker than first with two long macrosetae in a line. Height of clypeus equals 1 diameter of anterior median eye. Total length 3.9 mm. Carapace 2.0 mm long, 1.4 diameters wide, 0.9 wide behind lateral eyes. First femur 1.4 mm, patella and tibia 1.8, metatarsus 1.2, tarsus 0.7. Second patella and tibia 1.5 mm, third 0.8, fourth 1.1.

Note. Male was matched with the female because of similar coloration and the relatively wide cephalic region of the carapace.

Diagnosis. This species is distinct in that the eye region of the carapace is almost as wide as the thoracic region (Fig. 224). The male differs from *M. laticeps* by the curved embolus lamella with a short curved embolus "above" it (Fig. 225). This strange-looking species is apparently a *Metazygia* and closest to *M. laticeps*, which has also the carapace relatively wide anteriorly (Fig. 228).

Natural History. The male was collected in forest interior.

Distribution. Amazon region, Peru to Brazil (Map 3B).

Specimens Examined. PERU *Madre de Dios*: Zona Reservada Tambopata, 290 m, 8 July 1987, 1♀ (D. Silva D., MUSM). BRAZIL *Amazonias*: Reserva Florestal, 80 km from Manaus, 19 Feb. 1991, 1♂ (H. Fowler, E. Venticinque, R. S. Vieira, MCZ).

Metazygia laticeps (O. P.-Cambridge),
new combination

Figures 226–230; Map 3F

Epeira laticeps O. P.-Cambridge, 1889: 18, pl. 4, fig. 16, ♀. Female holotype from Bugaba, Panama, in BMNH no. 1890.7.1.5020, examined. Keyserling, 1892: 175, pl. 8, fig. 129, ♀.

Aranea laticeps:—F. P.-Cambridge, 1904: 516, pl. 49, fig. 21, ♀. Roewer, 1942: 845.

Araneus laticeps:—Bonnet, 1955: 527.

Note. The type specimen belonged to Keyserling. The vial containing the type also contains Keyserling's original, toothed, blue-bordered label, which is still faintly legible when dried. The first line reads Guatemala and not Bugaba.

Description. Female from Pipeline Road, Panama. Carapace dark orange with median double line, black on each side of thoracic region. Chelicerae, labium, endites orange. Sternum dusky orange-brown. Coxae light orange, legs dusky orange-brown. Dorsum of abdomen with pairs of brackets (Fig. 228); venter with median dark gray patch (Fig. 229). Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.8 diameter apart, 2 diameters from laterals. Posterior median eyes 0.6 diameter apart. Height of clypeus equals 0.6 diameter of anterior median eye. Total length 10.0 mm. Carapace 3.7 mm long, 3.1 wide, 2.2 behind lateral eyes. First femur 3.4 mm, patella and tibia 4.4, metatarsus 2.7, tarsus 1.3. Second patella and tibia 3.7 mm, third 2.2, fourth 3.2.

Male from Barro Colorado Island, Panama. Color as in female. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.8 diameter apart, 2.5 diameters from laterals. Posterior median eyes 0.3 diameter apart. Height of clypeus equals 0.4 diameter of anterior median eye. Abdomen as in female, but smaller. Total length 6.3 mm. Carapace 3.4 mm long, 2.5 wide, 1.7 behind lateral eyes. First femur 2.9 mm, patella and tibia 3.8, metatarsus 2.7, tarsus 1.2. Second patella and tibia 3.1 mm, third 1.7, fourth 2.5.

Note. Males and females were matched because both have a dusky patch on the venter of the abdomen (Fig. 229) and because both have the same wide distribution. Males are much less common in collections than females.

Variation. Total length of females 8.0 to 11.0 mm. Females and male from Mato Grosso, Brazil, differed from those of other regions: the female epigynum is more rounded posteriorly and in posterior view there is a round depression ventrally, but the lateral and median sclerites are of the same width as the one illustrated (Fig. 227). The male from Mato Grosso has a more elongate median apophysis, and the two parallel prongs of the embolus are of similar width.

Illustrations were made from a female from Pipeline Road, Panama, and a male from Barro Colorado Island, Panama.

Diagnosis. The abdomen is elongate oval (Fig. 228). *Metazygia laticeps* female has a pointed, wide, triangular epigynum (Fig. 226) with the posterior median plate slightly narrower than the lateral plates on each side (Fig. 227). The male has a large, semicircular median apophysis (at 5 hr in Fig. 230).

Natural History. Females are collected in tropical forest by unrolling rolled-up leaves, their retreat, at a height of about 150 cm. Specimens from Mato Grosso all came from gallery forest; Guyanas from forest savanna and swamp forest; and near Iquitos, Peru, from rain forest.

Distribution. Panama to Rio de Janeiro and northern Bolivia (Map 3F).

Specimens Examined. PANAMA *Colón:* Fort Sherman, 1♀ (MCZ). *Panamá:* nr. Gamboa, edge of Canal, 1948, 1♀ (W. Eberhard, MCZ); Soberania Natl. Park, Pipeline Road, 8 km NW Gamboa, 1♀ (MCZ); Barro Colorado Isl., Lago Gatún, 2♂, 2♀, MCZ.

TRINIDAD Port of Spain, 1♂ (MCZ). GUYANA Canje Ikuruwa River 05°70'N, 57°50'W, 1♀ (AMNH). FRENCH GUIANA nr. Placer Tresor, Roura Mtns., 1♀ (MCZ); nr. Sautero, Matouri, 1♀ (MCZ). COLOMBIA *Satander:* Río Suárez, 800–1,000 m, 1♀ (AMNH). PERU *Loreto:* Iquitos, 1♀ (AMNH); Explorama Lodge, 80 km NE Iquitos, 1♀ (FSCA). *San Martín:* 32 km SE Moyabamba, 1♂ (AMNH). *Junín:* Amable María,

1♀ (PAN). *Madre de Dios*: Zona Reservada Tambopata, 290 m, 1♀ (MUSM). BRAZIL *Pará*: Canindé, Rio Gurupi, 1♀ (AMNH). *Amazonas*: Tefé, 1♀ (S. Parrish, MCZ); Rio Negro, Umarituba, 1♀ (NRMS); Maturacá, 1♀ (MCP). *Espírito Santo*: Linhares, Parque Souterrana, 1♀ (MZSP). *Rio de Janeiro*: Rio de Janeiro, Jardim Botânico, 1♀ (MCZ); Parque da Cidade, 1♀ (MCZ). *Mato Grosso*: 260 km N Xavantina, 400 m, 12°49'S, 51°46'W, 3♀, 1♂ (MCZ). BOLIVIA *Beni*: Chacobo Indian Village, Río Benicito, 1♀ (AMNH); Est. Biológica Beni, 1♀ (USNM).

Metazygia mundulella Strand

Figures 231–238; Map 3F

Aranea (*Metazygia*) *mundulella* Strand, 1915: 114.

Ten female, two male, and two immature syntypes from mud-dauber wasp nest, Joinville, Santa Catarina State, Brazil, in SMF no. 4010, examined.

Aranea mundulella:—Roewer, 1942: 848.

Larinia mundula:—Bonnet, 1957: 2350.

Note. Strand (1915: 114) wrote, "Since there is no certainty from the literature as to which species the specimens belong, I make some descriptive remarks and propose, if necessary, the name *mundulella*."

Description. Female syntype. Carapace orange, cephalic region darker. Chelicerae, labium, endites dark orange. Sternum orange. Coxae, legs orange. Dorsum of abdomen light with a pair of dark anterior patches and four pairs of dark lines (Fig. 236). Venter light. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes 0.5 diameter apart, 0.9 diameter from laterals. Posterior median eyes 0.3 diameter apart, 2.1 diameters from laterals. Height of clypeus equals 0.5 diameter of anterior median eye. Total length 5.9 mm. Carapace 2.8 mm long, 2.1 wide, 1.4 behind lateral eyes. First femur 2.3 mm, patella and tibia 2.6, metatarsus 1.8, tarsus 0.8. Second patella and tibia 2.3 mm, third 1.4, fourth 2.0.

Male syntype. Color, including marks on abdomen, as in female. Posterior median eyes 0.9 diameter of anterior medians, laterals 0.5 diameter, posterior laterals 0.5. Anterior median eyes 0.7 diameter apart, 0.7 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1.2 diameters from laterals. Height of clypeus

equals 0.7 diameter of anterior median eye. Second tibia as thick as first, with macrosetae. Total length 4.5 mm. Carapace 2.4 mm long, 2.0 wide, 0.9 wide behind lateral eyes. First femur 2.1 mm, patella and tibia 2.7, metatarsus 1.9, tarsus 0.7. Second patella and tibia 2.3 mm, third 1.3, fourth 1.8.

Note. The syntypes have lost all white pigment and also the silver pigment of the eyes, perhaps from having been in a buffered formaldehyde solution (Levi, 1989). All except for one specimen (Figs. 231, 232) have the epigynum broken. Each side is broken off (Figs. 234, 235), apparently the result of mating. Males and females were collected together.

Diagnosis. The epigynum, unlike that of *M. genialis* (Fig. 239), has a concave margin on each side and a flat scape (Figs. 231, 233). In posterior view, it has a ventral pocket on each side (at 11 hr and 2 hr in Fig. 232). The male palpus, like that of *M. genialis* (Figs. 243, 244), has a lobe on the tegulum (at 12 hr in Figs. 237, 238) but differs in the shape of the embolus lamella and median apophysis (center and at 5 hr in Fig. 237).

Natural History. All specimens came from a mud-dauber wasp nest.

Metazygia genialis (Keyserling)

Figures 239–246; Map 3F

Epeira genialis Keyserling, 1892: 156, pl. 8, fig. 114.

♀. Two female syntypes from Rio Grande do Sul, Brazil, one has the epigynum broken, the other covered by secretions, in BMNH, examined.

Epeira mundula:—Keyserling, 1892: 179, pl. 9, fig. 132, ♂ (not female lectotype).

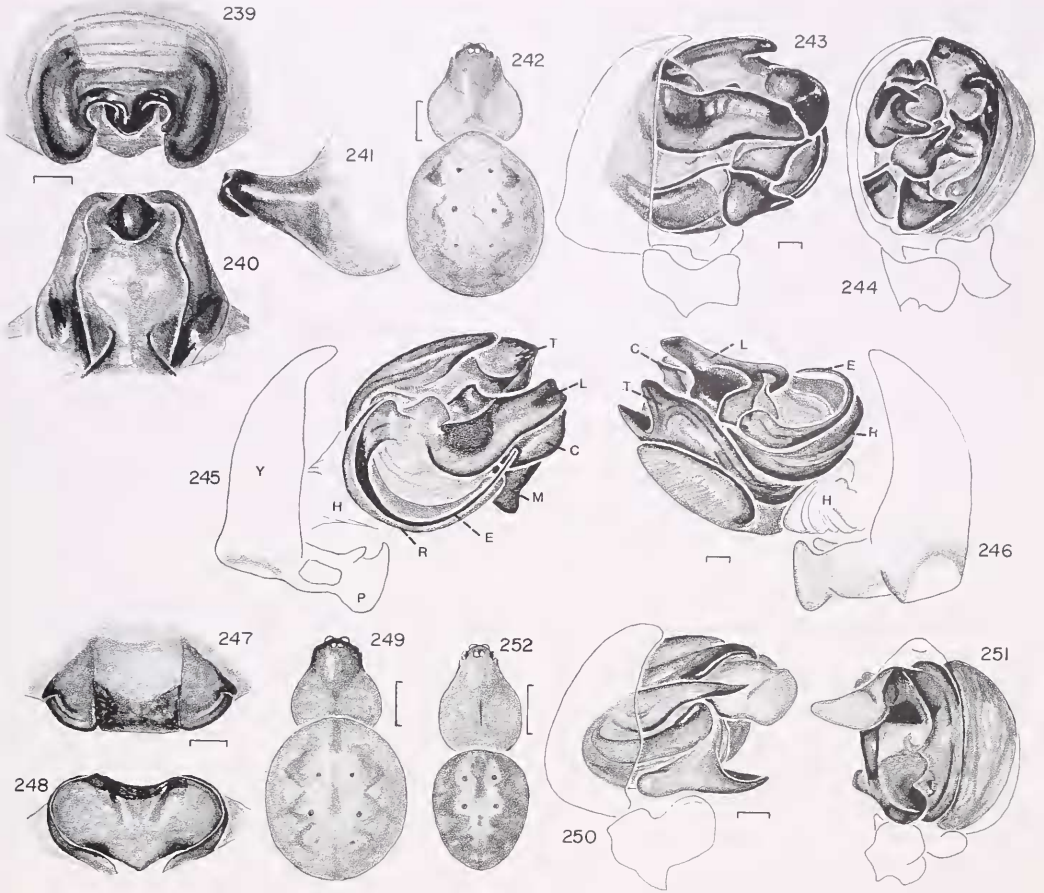
Aranea genialis:—Roewer, 1942: 843.

Araneus genialis:—Bonnet, 1955: 507.

Metazygia genialis:—Levi, 1991a: 179.

Note. The male paralectotype of *E. mundula* belongs with the female of *M. genialis*.

Description. Female from Santa Vitória do Palmar, Rio Grande do Sul. Cephalic region of carapace dark brown, thoracic region yellowish. Chelicerae dark brown. Labium, endites dark brown. Sternum light brown. Coxae yellowish; legs with proxi-



Figures 239–246. *Metazygia genialis* (Keyserling). 239–242, female. 239–241, epigynum. 239, ventral. 240, posterior. 241, lateral. 242, dorsal. 243–246, left male palpus. 243, mesal. 244, ventral. 245, 246, palpus pulled apart.

Figures 247–249. *M. amalla* n. sp., female. 247, 248, epigynum. 247, ventral. 248, posterior. 249, dorsal.

Figures 250–252. *M. ikuruwa* n. sp., male. 250, 251, palpus. 250, mesal. 251, ventral. 252, dorsal.

Abbreviations. C, conductor; H, hematodocha; E, embolus; L, embolus lamella; M, median apophysis; P, paracymbium; R, radix; T, tegulum; Y, cymbium.

Scale lines. 1.0 mm, genitalia 0.1 mm.

mal articles yellowish, distal brown. Dorsum of abdomen with dusky outline of folium (Fig. 242); venter gray, without marks. Posterior median eyes 0.6 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.7 diameter apart, 1 diameter from laterals. Posterior median eyes 0.3 diameter apart, 3 diameters from laterals. Height of clypeus equals 0.3 di-

ameter of anterior median eye. Total length 6.3 mm. Carapace 3.0 mm long, 2.3 wide, 1.5 wide behind lateral eyes. First femur 2.2 mm, patella and tibia 2.7, metatarsus 1.8, tarsus 0.8. Second patella and tibia 2.5 mm, third 1.7, fourth 2.1.

Male from Santa Vitória do Palmar, Rio Grande do Sul. Color as in female, but cephalic region yellowish. Posterior me-

dian eyes 0.5 diameter of anterior medians, laterals 0.5 diameter. Anterior median eyes 0.4 diameter apart, 0.5 diameter from laterals. Posterior medians 0.2 their diameter apart, 2.2 diameters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Third femur with three short macrosetae; each only three times as long as wide. Total length 4.8 mm. Carapace 2.6 mm long, 2.2 wide, 1.1 behind lateral eyes. First femur 2.2 mm, patella and tibia 2.7, metatarsus 2.2, tarsus 0.7. Second patella and tibia 2.4 mm, third 1.4, fourth 1.7.

Note. Males and females were collected together.

Variation. Total length of females 6.3 to 7.7 mm, males 4.8 to 5.8. Illustrations were made from Santa Vitória, Rio Grande do Sul, Brazil.

Diagnosis. The epigynum has a knob (Figs. 239, 240) rather than a flat scape as in *M. mundulella* (Figs. 231–235). The male, like *M. mundulella* (Figs. 237, 238), has a tegulum (T in Fig. 245) with a lobe (at 12 hr in Figs. 243, 245) and a distinctive shape of the embolus lamella (L in Fig. 245) and median apophysis (at 5 hr in Fig. 243).

Distribution. Bahia to Rio Grande do Sul States, Brazil (Map 3F).

Specimens Examined. BRAZIL *Bahia:* Mucuri, Fazenda Farol, 11 Apr. 1979, 1♂ (A. C. Viella, MCN 11108). *Rio Grande do Sul:* Santa Vitória do Palmar, Estação Ecológica do Taim, 9 Apr. 1986, 4♀, 1♂ (M. Rosenau, MCN 14821); Rio Grande, 4 Dec. 1986, 1♂ (A. D. Brescovit, MCN 16287); Guaíba, 9 Jan. 1980, 1♂ (M. H. Galileo, MCN 09182); Viamão, Fazenda Sanga da Porteira, 11–14 Apr. 1983, 2♀ (A. A. Lise, MCN 11565); Viamão, Lagoa do Casamento, 2 Apr. 1975, 1♀ (A. A. Lise, MCN 02644a); Viamão, Estação Exper. Fitotécnica de Aguas Belas, 30 Mar. 1977, 1♂ (E. H. Buckup, MCN 05567); Pelotas, May 1959, 1♂ (C. Biezanko, AMNH).

Metazygia amalla new species

Figures 247–249; Map 3D

Holotype. Female holotype from Pinhal, Est. Santa Catarina, Brazil, Jan. 1948 (A. Maller), in AMNH. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace orange, cephalic region orange-brown. Chelicerae dark orange-brown. Labium, endites brown. Sternum orange. Coxae light orange, legs orange-brown. Dorsum of abdomen with faint dark markings forming outline of a folium (Fig. 249); venter light dusky. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.8 diameter apart, 1.1 diameters from laterals. Posterior median eyes 0.2 diameter apart. Height of clypeus equals 0.6 diameter of anterior median eye. Total length 6.3 mm. Carapace 2.7 mm long, 2.1 wide, 1.1 wide behind lateral eyes. First femur 2.4 mm, patella and tibia 2.7, metatarsus 1.8, tarsus 0.8. Second patella and tibia 2.3 mm, third 1.5, fourth 2.0.

Variation. Total length of females 6.3 to 6.5 mm. Illustrations were made from the female holotype. The holotype and paratype have the median area of the epigynum broken (Figs. 247, 248).

Diagnosis. *Metazygia amalla* differs from other species by the wide posterior median plate of the epigynum (Fig. 248).

Paratype. BRAZIL *Santa Catarina:* Pinhal, Jan. 1948, 2♀ (A. Maller, AMNH).

Metazygia ikuruwa new species

Figures 250–252; Map 3D

Holotype. Male holotype from Canje Ikuruwa River, 05°70'N, 57°50'W, Guyana, Aug.–Dec. 1961 (G. Bentley), in AMNH. The specific name is a noun in apposition after the type locality.

Description. Male holotype. Carapace orange. Chelicerae, labium, endites orange; sternum, coxae orange. Legs orange, distal articles darker. Dorsum of abdomen with dark outline of folium (Fig. 252); venter dusky. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.8 diameter apart, 0.5 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.5 diameters from laterals. Height of clypeus equals 0.6 diameter of anterior median eye. Total length 4.4 mm. Carapace 2.4 mm long, 1.7 wide, 0.8 wide be-

hind lateral eyes. First femur 2.3 mm, patella and tibia 2.7, metatarsus 2.0, tarsus 0.9. Second patella and tibia 2.3 mm, third 1.3, fourth 1.9.

Diagnosis. This species differs from *M. gregalis* by the large anchor-shaped median apophysis (at 5 hr in Fig. 250).

Paratypes. GUYANA *Bartica*: Kartabo, 1920, 3♂ (CUC).

Metazygia gregalis (O. P.-Cambridge)

Figures 253–262; Map 3E

Epeira gregalis O. P.-Cambridge, 1889: 22, pl. 5, fig. 3, ♀. Ten female syntypes from Veragua [Prov. Veraguas], Panama in BMNH, examined. Keyserling, 1892: 177, pl. 9, fig. 131, ♀, ♂.

Metazygia gregalis:—F. P.-Cambridge, 1904: 501, pl. 47, fig. 24, ♀, ♂. Petrunkevitch, 1930: 327, figs. 208–210, ♀, ♂. Roewer, 1942: 868. Bonnet, 1957: 2819.

Eustala tuceps Chamberlin, 1925: 217. Female holotype from Barro Colorado Island [Lago Gatún], Panama, in MCZ, examined. Roewer, 1942: 767. First synonymized by Banks, 1929: 95.

Metazygia manni Bryant, 1945: 377, figs. 12, 13, 23, ♀, ♂. Male holotype from Cap Haitien, Haiti, in MCZ, examined. Brignoli, 1983: 274. NEW SYNONYMY.

Metazygia similis Caporiacco, 1947: 25; 1948: 660, fig. 70, ♀. Female holotype from Mackenzie, [06°00'N, 58°17'W], Guyana, in MZUF, examined. Brignoli, 1983: 274. NEW SYNONYMY.

Synonymy. The genitalia of *Metazygia manni* and *M. similis* are similar to those of *M. gregalis*. No differences could be found.

Description. Female from Panama. Carapace orange, cephalic region brown. Chelicerae brown. Labium, endites, sternum orange. Coxae orange; legs orange. Dorsum of abdomen with dusky pattern over tiny white pigment spots (Fig. 257); venter light dusky without marks. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.8 diameter apart, 1.5 diameters from laterals. Posterior median eyes 0.5 diameter apart. Height of clypeus equals 0.8 diameter of anterior median eye. Total length 8.0 mm. Carapace 3.5 mm long, 2.7 wide, 1.5 behind lateral eyes. First

femur 2.7 mm, patella and tibia 3.2, metatarsus 2.4, tarsus 0.9. Second patella and tibia 2.9 mm, third 1.8, fourth 2.5.

Male from Panama. Color as in female. Posterior median eyes 0.7 diameter of anterior medians, anterior laterals 0.7 diameter, posterior laterals 0.6. Anterior median eyes 0.5 diameter apart, 0.7 diameter from laterals. Posterior median eyes 0.3 diameter apart. Height of clypeus equals 0.6 diameter of anterior median eye. Fangs modified (Figs. 261, 262). Endite without tooth, palpal femur without facing tubercle. First coxa with very small hook. Second tibia thicker than first, without special macrosetae. Total length 5.0 mm. Carapace 2.9 mm long, 2.1 wide, 1.3 wide behind lateral eyes. First femur 2.4 mm, patella and tibia 2.8, metatarsus 2.1, tarsus 0.9. Second patella and tibia 2.3 mm, third 1.5, fourth 2.0.

Note. Males and females are commonly collected together.

Variation. Total length of females 6.2 to 9.6 mm, males 4.0 to 6.0. The largest male and female both came from Pelotas, Rio Grande do Sul State, Brazil. The epigynum is quite variable: sometimes the posterior two bulges are absent, sometimes there is a median bulge. The illustrations were made from specimens from Barro Colorado Island, Panama.

Diagnosis. The female epigynum in ventral view is wider than long (Figs. 253, 254); that of *M. benella* and *M. yobena* is longer than wide (Figs. 263, 270). The median apophysis (M) of the male palpus is a small hook (Figs. 258, 260); it is longer in *M. benella* (Fig. 267) and has a black wall in *M. yobena* (Fig. 274).

Natural History. Specimens have been collected from the following places: brush along fences, on houses, and eaves of a building in Costa Rica; on a building at night in Panama; on walls under light at night in Paraguay; in sweeping river vegetation in Bolivia; from a wasp nest in Surinam; and from rolled leaves in savanna, Depto. Beni, Bolivia.

Distribution. Nicaragua, Greater Antil-

les (except Jamaica), Tobago, south to Argentina (Map 3E).

Specimens Examined. NICARAGUA Bonanza (AMNH). COSTA RICA *Heredia*: Serapiquí (MCZ); La Selva (MCZ, USNM). *Cartago*: Turrialba (CAS). *Puntarenas*: Finca Selva Verde (DU). PANAMA *Chiriquí*: Puerto Armuelles (FSCA); David (AMNH, MCZ). *Veraguas*: NE Puerto Mutis (MIUP). *Herrera*: París (MCZ). *Coclé*: Natá (AMNH). *Colón*: Santa Rosa (AMNH); Fort Gulick (AMNH); Puente Sobre Represa Madden (MIUP); Madden Dam (AMNH, MCZ). *Panamá*: Reserva Forestal (MIUP); Barro Colorado Isl., Lago Gatún (CAS, MIUP); Frijoles (MCZ); Pedro Miguel (MCZ); Red Tank (MCZ).

CUBA *Santiago de Cuba*: Cuabitas (AMNH). HAITI Cap Haitien (MCZ). DOMINICAN REPUBLIC Santo Domingo, Jardín Botánico (MCZ); Cruce de Jima Abajo, La Vega (MNSD). PUERTO RICO Aguas Buenas (JEC); Caguas (AMNH); Adjuntas (AMNH); Humacao (MCZ); Laguna Cartagena, Valle de Leras (MCZ); Loma Tinaja, Laguna Cartagena (AMNH); Mayagüez (AMNH); Toa Baja (AMNH). TOBAGO Bucco Bay (AMNH).

VENEZUELA *Sucre*: 7 km E San Antonio del Golfo (USNM). *Apuré*: Mantecal (MCZ). *Distrito Federal*: San José del Avila, Caracas (AMNH). GUYANA Kartabo (AMNH). SURINAM Brokopondo Lake (AMNH). FRENCH GUIANA St. Laurent de Maroni (PAN). COLORADO *Magdalena*: Pozo Colorado, 10 km W Santa Marta (AMNH). *Santander*: Río Suarez (AMNH). *Meta*: Carimagua (MCZ); El Porvenir, 140 m (MCZ); Finca Chenevo, 20 km N Río Muco, 20 km S El Porvenir (MCZ); Lomalinda, Puerto Lleras (CAS, MCZ); 15 km SW Puerto Lopez, Hda. Mozambique, 200 m (MCZ). *Valle*: Cali (AMNH, MCZ); Centr. Hidroelectr. Anchicayá (MCZ); Lago Calima, 1,300 m (MCZ); Palmira (CAS); Río Jamundí entre Cali y Jamundí (MCZ); Río Para, below Buenos Aires (MCZ); Río Tuluá, 1,100 m (MCZ); Sevilla (AMNH). ECUADOR *Sucumbios*: Res. Fauna Cuyabeno, Laguna Grande (MCZ). *Manabí*: road betw. Crucita and Charapotó (MCZ). PERU *Loreto*: Estiron, Río Ampiyacu (AMNH); Alto Amazonas, Pastaza (MCZ); Iquitos airport (FSCA); Jenaro Herrera (MUSM); Río Putamayo (AMNH). *Cajamarca*: Jean (AMNH). *Tumbes*: Lechugal (PAN). *Piura*: San Lorenzo (MCZ); Guayaquil (CAS); Mallares, Río Chira (CAS); Sullaña (CAS). *Lambayeque*: pampa NW Oyotún (MCZ); UCA Yarina-Coche (IRSNB). *Ucayali*: Pucallpa (MUSM). *Huánuco*: Higuera, Las Lomas (CAS); Tingo María (AMNH); Monzón Valley, Tingo María (CAS). *Ancash*: Quillabamba (AMNH). BRAZIL *Amazonas*: Tefé (MCZ); Guajará, Río Negro (AMNH); Lower Río Negro (AMNH); Santo Antônio do Iça (MCN); Río Xingu (MNRJ). *Acre*: mouth of Río Embira, Río Juruá (AMNH). *Rondônia*: Fazenda Rancho Grande, NE Cacaullandia (FSCA). *Mato Grosso*: Barra do Tapirapé (AMNH); Porto Velho, Río Tapirapé (AMNH); Juan Pinheiros, Río Tapirapé (AMNH). *Mato Grosso do Sul*: Corumbá (AMNH). *Minas Ger-*

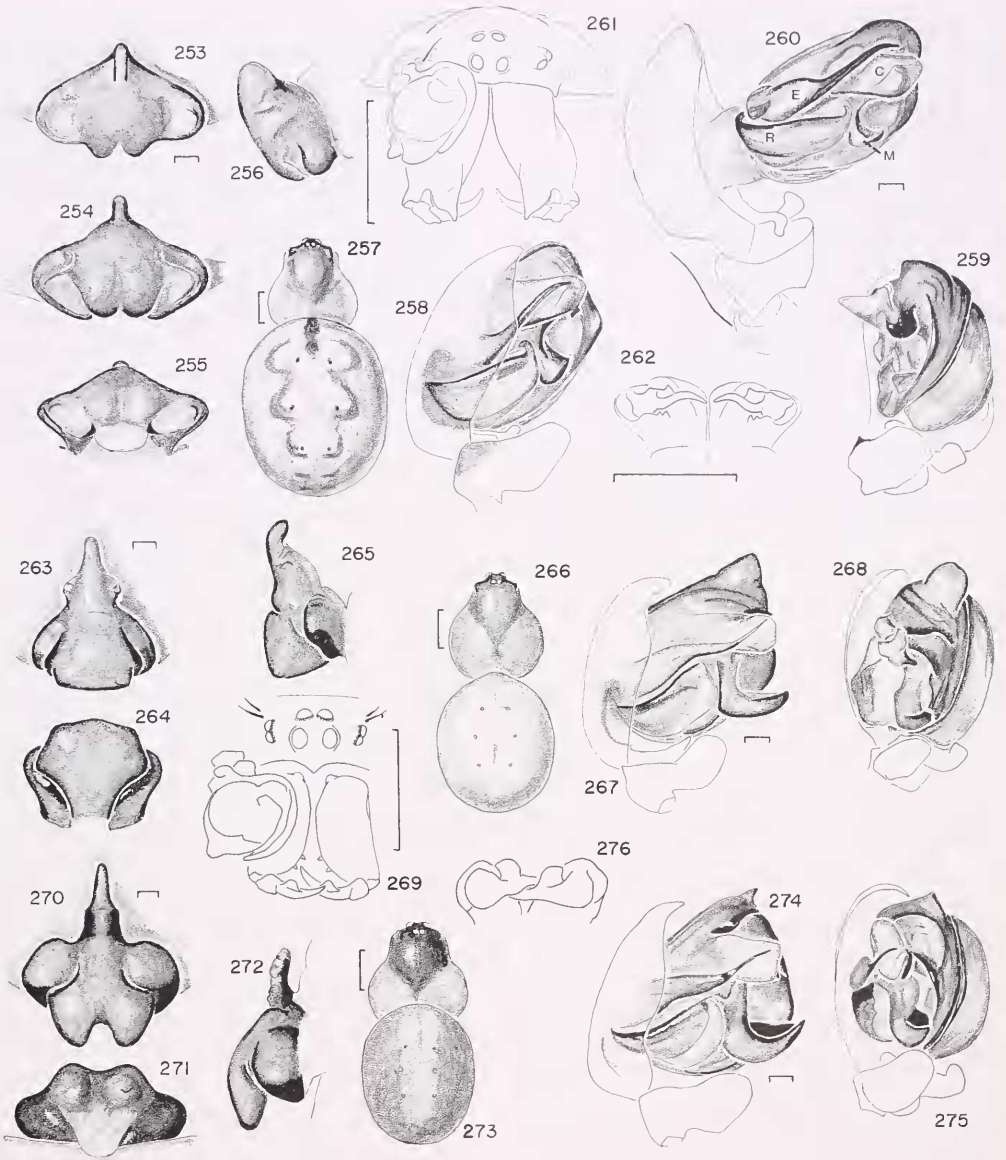
ais: Lavras (MCZ); Minas de Serinha, Diamantina (AMNH); Ubá (AMNH). *Rio de Janeiro*: Rio de Janeiro (MCZ). *São Paulo*: Botucatu (MZSP). *Paraná*: Cataratas de Iguazu (MCZ); Ponta Grossa (AMNH). *Santa Catarina*: Blumenau (AMNH); Joaçaba (MZSP). *Rio Grande do Sul*: very common (MCN). URUGUAY *Maldonado*: Punta del Este (MCZ). *Colonia*: Punta Gorda (CAS). PARAGUAY *Central*: Aregua (CAS); Villeta (MCZ); Asuncion (FSCA). *Itapúa*: Antidia Natianda (MCZ). BOLIVIA *Pando*: Abuña (MCZ). *Beni*: Chacobo Indian Village, Río Benicito (AMNH); Estacion Biológica Beni, savanna, 50 km E San Borja (USNM); Espiritu, Yacuma (ZSM). ARGENTINA *Misiones*: San Javier (MLP). *Chaco*: Selva del Río de Oro (MEG). *Formosa*: Pto. Santos (MACN). *Santiago del Estero*: Santiago del Estero (MCZ).

Metazygia benella new species Figures 263–269; Map 3C

Holotype. Female holotype, male paratype from near Cali, Valle, Colombia, ?1983 (W. Eberhard), in MCZ. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace light orange, cephalic region darker orange. Chelicerae orange-brown. Labium, endites dark orange. Sternum light orange. Coxae, legs light orange. Dorsum of abdomen white (Fig. 266); venter light dusky. Posterior median eyes 0.8 diameter of anterior medians, anterior laterals 0.8 diameter, posterior laterals 0.7. Anterior median eyes 0.7 diameter apart, 1.3 diameters from laterals. Posterior median eyes 0.2 diameter apart, 2.8 diameters from laterals. Height of clypeus equals 0.6 diameter of anterior median eye. Total length 5.6 mm. Carapace 2.9 mm long, 2.3 wide, 1.5 wide behind lateral eyes. First femur 2.5 mm, patella and tibia 2.9, metatarsus 2.1, tarsus 1.0. Second patella and tibia 2.7 mm, third 1.3, fourth 2.3.

Male paratype. Color as in female. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.7 diameter apart, 0.7 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.7 diameters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Fangs modified (Fig. 269). Endite lacks tooth. Total length 5.0 mm. Carapace 2.5 mm long, 2.1 wide, 1.0 behind lateral eyes 1.0 wide. First



Figures 253–262. *Metazygia gregalis* (O. P.-Cambridge). 253–257, female. 253–256, epigynum. 253, ventral. 254, subposterior. 255, posterior. 256, lateral. 257, dorsal. 258–262, male. 258–260, left male palpus. 258, mesal. 259, ventral. 260, pulled apart. 261, eye region, chelicerae, and right palpus. 262, fangs from below.

Figures 263–269. *M. benella* n. sp. 263–266, female. 263–265, epigynum. 263, ventral. 264, posterior. 265, lateral. 266, dorsal. 267–269, male. 267, 268, palpus. 267, mesal. 268, ventral. 269, eye region, chelicerae, and right palpus.

Figures 270–276. *M. yobena* n. sp. 270–273, female. 270–272, epigynum. 270, ventral. 271, posterior. 272, lateral. 273, dorsal. 274–276, male. 274, 275, palpus. 274, mesal. 275, ventral. 276, fangs from below.

Abbreviations. C, conductor; E, embolus; M, median apophysis; R, radix.

Scale lines. 1.0 mm, genitalia 0.1 mm.

femur 2.1 mm, patella and tibia 2.5, metatarsus 2.0, tarsus 0.9. Second patella and tibia 2.3 mm, third 1.3, fourth 1.8.

Note. Males and females were collected together.

Variation. Most individuals have a folium pattern on the abdomen as in Figure 257. Total length of females 6.3 to 8.4 mm, males 4.2 to 5.1. Illustrations were made of the female holotype and male paratype collected with it.

Diagnosis. The female epigynum (Fig. 263) is longer than wide, lacks the posterior notch present in *M. yobena* (Fig. 270), and has a pair of lobes on the scape (at 10 hr and at 2 hr in Fig. 263). The male has a round tubercle on the tegulum (at 1 hr in Fig. 267), has a longer median apophysis (at 4 hr in Fig. 267) than *M. gregalis* (Fig. 258, M in Fig. 260), and is without the black posterior wall (Fig. 267) present in *M. yobena* (at 4 hr in Fig. 274).

Natural History. A male and female were collected in roadside shrubs at night near Cali, Colombia.

Distribution. Panama and Colombia (Map 3C).

Paratypes. COLOMBIA *Valle:* nr. Cali, 1,000 m, no date, 2♀ (W. Eberhard 759, 807, MCZ), 8 May 1973, 1♀ (W. Eberhard 513, MCZ), Feb. 1975, 1♀ (W. Eberhard 937, MCZ), 1973–1974, 1♂ (W. Eberhard, MCZ), 3 Mar. 1973, 1♀, 1♂ (H. Levi, W. Eberhard, MCZ); above Barrio Siloe, SW Cali, 3 July 1972, 1♂ (M. Corn, MCZ).

Specimens Examined. PANAMA *Panamá:* Barro Colorado Island, Lago Gatún, 25 Apr. 1946, 1♀ (T. C. Schneirla, AMNH), July 1950, 1♂; 19 July 1954, 1♂, Aug. 1954, 1♀, 14–18 Jan. 1958, 2♀, 6 Feb. 1958, 1♀, 18 Feb. 1958, 1♂ (A. M. Chickering, MCZ).

Metazygia yobena new species

Figures 270–276; Map 3C

Holotype. Female holotype, one female, and two male paratypes from Mitú, 188 m, Depto. Vaupés, Colombia, at night in bamboo, 20 Apr. 1979 (M. Barreto), in MCZ. The specific name is an arbitrary combination of letters.

Description. Female from Cuyabeno, Sucumbíos Prov., Ecuador. Carapace

brownish black, sides of thoracic region light orange. Chelicerae black. Labium, endites brown. Sternum yellowish, darker on each side. Coxae, legs dusty orange. Dorsum of abdomen with indistinct median lighter band (Fig. 273); venter dark dusky. Posterior median eyes 0.9 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.8 diameter apart, 1.3 diameters from laterals. Posterior median eyes 0.2 diameter apart, 2.5 diameters from laterals. Height of clypeus equals 0.7 diameter of anterior median eye. Total length 6.0 mm. Carapace 3.1 mm long, 2.2 wide, 1.3 wide behind lateral eyes. First femur 2.5 mm, patella and tibia 3.2, metatarsus 2.3, tarsus 1.1. Second patella and tibia 2.7 mm, third 1.6, fourth 2.3.

Male paratype. Color as in female. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.7 diameter apart, 0.7 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.9 diameters from laterals. Height of clypeus equals 0.6 diameter of anterior median eye. Fangs modified (Fig. 276). Endite without tooth, palpal femur without facing tubercle. First coxa with small hook on its side. All legs with relatively long macrosetae. Total length 5.2 mm. Carapace 2.7 mm long, 2.1 wide, 1.1 wide behind lateral eyes. First femur 2.4 mm, patella and tibia 2.9, metatarsus 2.1, tarsus 0.9. Second patella and tibia 2.4 mm, third 1.5, fourth 2.0.

Note. Males and females were collected together.

Variation. Total length of females 4.9 to 7.5 mm, males 4.1 to 5.6. Most females have the folium pattern made up of pairs of brackets on the abdomen, which is typical of the genus (Fig. 257). Some male palpi have only a small tubercle or none on the tegulum of the palpus (at 1 hr in Fig. 274). Illustrations were made from a specimen from the Cuyabeno Reserve, Sucumbíos Prov., Ecuador, and from a palpus from a male collected in Depto. Vaupés, Colombia. Figure 276 was made from a specimen from near Manaus, Brazil.

Diagnosis. The epigynum (Fig. 270) differs from that of *M. gregalis* (Fig. 253) by being longer than wide and from that of *M. benella* (Fig. 263) by having a notch on the posterior margin (at 6 hr in Fig. 270). The palpus differs from that of the two similar species by having a black wall on the hook-shaped median apophysis of the palpus (at 4 hr in Fig. 274).

Natural History. Specimens came from bamboo in Colombia; from trees in a lake in the Cuyabeno Reserve, Ecuador; from trees in rain forest; from swamp plants in Peru; from forest savanna in Guyana; from falling into a canoe from overhanging vegetation in Venezuela; and from cerrado shrub in Mato Grosso, Brazil.

Distribution. Guyana and Amazon drainage (Map 3C).

Paratypes. COLOMBIA *Vaupés:* Mitú, at night in bamboo, 20 Apr. 1971, 1♀, 1♂ (*M. Barreto*, MCZ).

Specimens Examined. VENEZUELA *Amazonas:* middle Río Baria, 100 m (AMNH). GUYANA *Kuwini River*, from landing to Essequibo (AMNH); *Upper Essequibo River* (AMNH); *Canje Ikuruwa River* (AMNH); *Kartabo* (AMNH); *Tumatumari* (AMNH). FRENCH GUIANA *Uaassa* [Uaçá, Brazil] (PAN). COLOMBIA *Meta:* Finca Chenevo, 20 km S El Porvenir (MCZ); *Hacienda Mozambique*, 15 km SW Puerto Lopez (MCZ); *Lomalinda*, 3°18'N, 73°22'W (CAS); *Carimagua*, 175 m (MCZ). *Amazonas:* *Aracuara* (CV); *Río Pira*, *Aparoris*, 0°25'S, 70°15'W (CAS). ECUADOR *Napo:* *Coca*, *Río Napo* (*L. Peña*, MCZ). *Sucumbíos:* *Cuyabeno*, common (MCZ, MECN). *Pastaza:* *El Puyo*, *Río Pastaza*, 900 m (CAS). PERU *Loreto:* *Explorama Lodge*, 25 km NE Iquitos (FSCA); *Estiron Río Ampiacu* (AMNH); *Prov. Alto Amazonas, Pastaza* (MCZ); *Aquaitia* (AMNH). *Amazonas:* *Alto Río Comainas, Puesto de Vigilancia* (*D. Silva D.*, MUSM). *Huánuco:* *Divisoria* (AMNH); *Monzón Valley, Tingo María* (AMNH, CAS). *Junín:* *Amable María* (PAN). *Cuzco:* *Chanchosmayo Valley* (AMNH, CAS). *Madre de Dios:* *Puerto Maldonado* (AMNH); *Zona Reserv. Tambopata*, 12°50'S, 69°17'W (USNM); *Zona Reserv. de Manu* (MUSM); *Alto Río Madre de Dios* (*D. Silva D.*, MUSM). BRAZIL *Amazonas:* *Manaus, igapó Tarumã-Mirim* (INPA); *Río Autaz, Santa Amélia* (NRMS). *Pará:* *Belém* (MCZ); *Aldeia Araçu*, 20 km E *Canindé* (AMNH). *Rondônia:* *Abunã* (MCZ); *Fazenda Rancho Grande, NE Cacauplandia* (FSCA). *São Paulo:* *Barueri* (MZSP). BOLIVIA *Beni:* *Espiríto, Yacuma* (ZSM); *Estacion Biol. Beni*, 14°47'S, 66°15'W (USNM); 19.5 km S *Rurrenabaque* (USNM).

Metazygia voluptifica (Keyserling)
Figures 277–284; Map 3D

Epeira voluptifica Keyserling, 1892: 152, pl. 7, fig. 112, ♀, ♂. Female and male syntypes from Rio Grande [do Sul], Brazil, in BMNH, no. 1890.7.1.5041–5042, examined.

Epeira mundula Keyserling, 1892: 179, pl. 9, fig. 132, ♀, not ♂. Female lectotype, here designated, from Rio Grande do Sul, Brazil, in BMNH, no. 1890.7.1.5067, 5068, examined. NEW SYNONYMY.

Zilla punctata Keyserling, 1893: 305, pl. 15, fig. 225, ♀. Female holotype from Nova Friburgo, Brazil, lost. Not in BMNH, HECO, MCZ, NMW, USNM, ZMB. NEW SYNONYMY.

Larinia mundula:—Simon, 1905: 10. Roewer, 1942: 771. Bonnet, 1957: 2350.

Aranea voluptifica:—Roewer, 1942: 856.

Araneus voluptificus:—Bonnet, 1955: 631.

Metazygia mundula:—Harrod, Levi, and Leiben-sperger, 1991: 246.

Metazygia voluptifica:—Levi, 1991a: 180.

Note. Keyserling described this species several times, first as *Epeira voluptifica*. Keyserling's female has a bracket folium as in *M. gregalis* (Fig. 257) and the epigynum lacks a scape. The type vial of *Epeira mundula* has a toothed, blue-bordered, 23-by-30-mm label of Keyserling reading, "Rio Grande do Sul, *Epeira mundula* Keys." The female is chosen as the lectotype because Keyserling's illustration of the female is recognizable while that of the male is not. The female lectotype has the scape of the epigynum torn off, as is that of most specimens. The male in the type vial is one that I associated with *M. genialis*. A second vial of *E. mundula* with a female syntype has a similar label, 20 by 30 mm in size, and has also a different label with the number 1889.2.17. It also contains my typed label reading "♀, ♂ syntypes," added in 1974, when I examined the specimens and illustrated them. The type of *Zilla punctata* is lost, but the illustration of the epigynum matches this species. Keyserling gives the total length as 9.0 mm, larger than specimens I have examined.

Description. Female from Guaíba, Rio Grande do Sul. Carapace light orange, cephalic area darker. Chelicerae brown. La-

bium, endites orange. Sternum light orange. Coxae light orange; legs light orange, distal articles darker, dusky. Dorsum of abdomen with a pattern of paired lines or brackets (Fig. 282); venter with some white pigment behind epigynum. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.3 diameter apart, 1 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1.6 diameters from laterals. Height of clypeus equals 0.5 diameter of anterior median eye. Total length 5.0 mm. Carapace 2.1 mm long, 1.6 wide, 0.9 wide behind lateral eyes. First femur 1.9 mm, patella and tibia 2.1, metatarsus 1.4, tarsus 0.7. Second patella and tibia 1.9 mm, third 1.1, fourth 1.6.

Male from Santa Vitória do Palmar. Color as in female, but less gray pigment on abdomen. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes 0.7 their diameter apart, 0.7 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1.3 diameters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Second tibia thinner than first. Total length 4.5 mm. Carapace 2.1 mm long, 1.6 wide, 0.9 wide behind lateral eyes. First femur 2.2 mm, patella and tibia 2.7, metatarsus 2.0, tarsus 0.8. Second patella and tibia 2.4 mm, third 1.2, fourth 1.5.

Note. Males and females were matched because collections came from the same locality (Minas Serinha, Minas Gerais) and because the carapace was of similar length. The female from Mato Grosso was collected with a male *M. corumba*; the *E. mundula* lectotype was with a male *M. genialis*. However, Keyserling described the female of *E. voluptifica* together with a male that I consider here the correct match.

Variation. Most females have the scape torn off (Figs. 280, 281). Total length of females 4.8 to 7.3 mm, males 4.0 to 5.5. Illustrations of females were made from specimens from Guaíba, Rio Grande do Sul; the male from Santa Vitória do Palmar, Rio Grande do Sul.

Diagnosis. The female can be separated from others by the two almost round circles of the epigynum in ventral view (Figs. 277, 280). The female is distinguished from that of *M. viriosa* by the posterior median plate of the epigynum, which is slightly wider than each lateral plate (Figs. 278, 281). The male is separated from others by the black fold of the tegulum of the palpus, which is distally serrate (T at 12 hr in Fig. 283).

Natural History. A female was collected from grass and brush along a fence in Colombia.

Distribution. Colombia to Argentina (Map 3D).

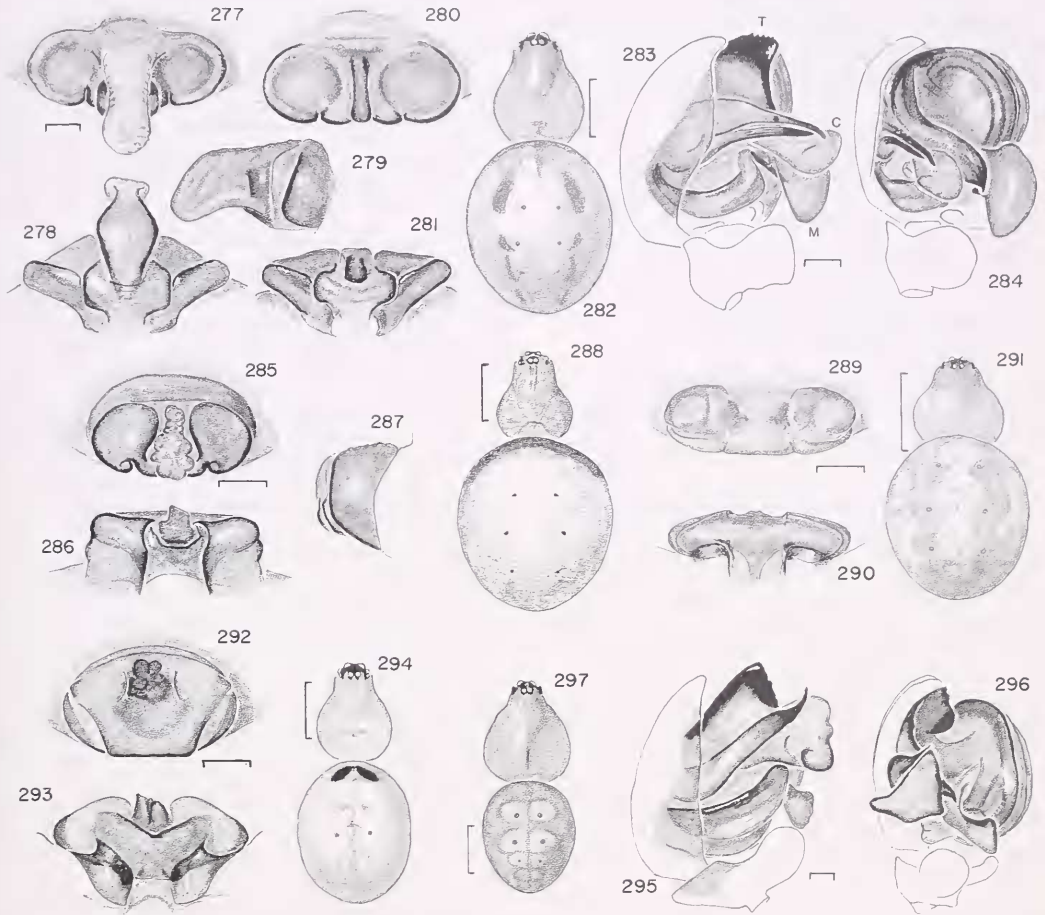
Specimens Examined. COLOMBIA *Meta:* Carimagua, Oct. 1973, 1♀ (W. Eberhard, MCZ). PERU *Madre de Dios:* Alto Rio Madre de Dios, Playa Maronal campsite, 24 Sept. 1987, 1♂ (D. Silva D., MUSM). BRAZIL *Minas Gerais:* Diamantina, Minas de Serinha, 1945, 9♀, 1♂ (E. Cohn, AMNH). *Mato Grosso do Sul:* Corumbá, 28–29 May 1960, 1♀ (B. Malkin, AMNH). *Rio Grande do Sul:* Encantado, 24 May 1986, 1♂ (A. D. Brescovit, MCN 15125); Santa Vitória do Palmar, Estação Ecológica do Taím, 26 Nov. 1985, 1♀ (M. Rosenau, MCN 14050), 9 Apr. 1986, 1♂ (M. Rosenau, MCN 14824); Guaíba, Granja Carola, 23 July 1986, 15♀ (M. A. L. Marques, MCN 15419); Triunfo 25 Jan. 1990, 1♂ (A. B. Bonaldo, MCN 19387); Porto Alegre, Vila Assunção, 27 July 1988, 1♀ (R. Richter, MCN 18003). ARGENTINA *Chaco:* Resistencia, 2♀ (MACN). *Corrientes:* Corrientes, 1♀ (Z. von Beneden, ZMK). *Entre Ríos:* Salto Grande, NE Concordia, Mar. 1964, 1♂ (M. E. Galiano, MEG).

Metazygia viriosa (Keyserling),
new combination

Figures 285–288; Map 3A

Epeira viriosa Keyserling, 1892: 165, pl. 8, fig. 122, ♀. Female holotype from Rio Grande do Sul, Brazil, in BMNH no. 1890.7.1.506, examined.
Aranea viriosa:—Roewer, 1942: 856.
Araneus viriosus:—Bonnet, 1955: 630.

Description. Female holotype. Carapace orange-brown, cephalic region darkest. Chelicerae, labium, endites brown. Sternum dusky orange. Legs light orange. Dorsum of abdomen with anterior transverse black band (Fig. 288). Venter without marks or pigment. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes



Figures 277–284. *Metazygia voluptifica* (Keyserling). 277–282, female. 277–281, epigynum. 277, ventral. 278, posterior. 279, lateral. 280, ventral, scape torn off. 281, posterior, scape torn off. 282, dorsal. 283, 284, left male palpus. 283, mesal. 284, ventral.

Figures 285–288. *M. viriosa* (Keyserling), female. 285–287, epigynum. 285, ventral. 286, posterior. 287, lateral. 288, dorsal.

Figures 289–291. *M. ituari* n. sp., female. 289, 290, epigynum. 289, ventral. 290, posterior. 291, dorsal.

Figures 292–294. *M. limonal* n. sp., female. 292, 293, epigynum. 292, ventral. 293, posterior. 294, dorsal.

Figures 295–297. *M. tanica* n. sp., male. 295, 296, left palpus. 295, mesal. 296, ventral. 297, dorsal.

Scale lines. 1.0 mm, genitalia 0.1 mm.

0.7 diameter apart, 0.7 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.5 diameters from laterals. Height of clypeus equals 0.7 diameter of anterior median eye. Abdomen spherical (Fig. 288). Total length 4.8 mm. Carapace 1.7 mm long, 1.3 wide. First femur 1.7 mm, patella and tibia 2.1, metatarsus 1.4, tarsus 0.6.

Second patella and tibia 1.8 mm, third 1.1, fourth 1.7.

Variation. All females had the scape of the epigynum torn off. Total length of females 4.6 to 5.4 mm. Illustrations were made from the female holotype; Figure 287 was made from a female from Jurubatuba.

Diagnosis. *Metazygia viriosa* differs from *M. voluptifica* by the markings of the abdomen (Fig. 288) and by the median posterior depression of the epigynum (Fig. 286).

Specimens Examined. BRAZIL *São Paulo*: Cocaia, Sept. 1950, 1♀ (H. Urban, MZSP 9662); Jurubatuba, 6 July 1941, 2♀ (P. F. S. Pereira, MZSP 9619). *Santa Catarina*: Pinhal, Jan. 1948, Dec. 1948, 6♀ (A. Maller, AMNH).

***Metazygia ituari* new species**
Figures 289–291; Map 3D

Holotype. Female holotype from Utiariti (Utiariti), Est. Mato Grosso, Brazil, 1961 (H. Lenko) in MZSP no. 4155. The specific name is an arbitrary combination of letters.

Description. Female holotype. Cephalothorax light orange, only eyes with some black pigment. Dorsum of abdomen with three longitudinal white pigment bands (Fig. 291); venter with white pigment spots. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.6 diameter apart, 0.7 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.8 diameters from laterals. Ocular quadrangle narrower behind than in front. Height of clypeus equals 0.4 diameter of anterior median eye. Abdomen (Fig. 291). Total length 3.1 mm. Carapace 1.3 mm long, 1.1 wide, 0.6 wide behind lateral eyes. First femur 1.1 mm, patella and tibia 1.2, metatarsus 0.7, tarsus 0.5. Second patella and tibia 1.1 mm, third 0.7, fourth 0.9.

Diagnosis. The female, which apparently has lost the scape of her epigynum, is separated from *M. voluptifica* and *M. viriosa* by the short, wide posterior median plate of the epigynum (Fig. 290).

***Metazygia limonal* new species**
Figures 292–294; Map 4A

Holotype. Female holotype from El Limonal, Alto Río Madre de Dios, Depto. Madre de Dios, night collecting, 21 June 1988 (P. Lozada), in MUSM. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace very light orange, black only between

eyes. Chelicerae, labium, endites light orange. Sternum light orange. Legs light orange. Dorsum of abdomen white with anterior dumbbell-shaped black marks (Fig. 294); venter with a white square. Posterior median eyes same diameter as anterior medians, anterior laterals 0.7 diameter, posterior 0.6. Anterior median eyes 0.7 diameter apart, 0.3 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1 diameter from laterals. Ocular quadrangle narrower behind than in front. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 4.2 mm. Carapace 1.7 mm long, 1.3 wide, 0.8 behind lateral eyes. First femur 1.9 mm, patella and tibia 2.4, metatarsus 1.7, tarsus 0.7. Second patella and tibia 2.1 mm, third 1.2, fourth 1.8.

Variation. All females examined had the scape of the epigynum torn off (Figs. 292, 293). Total length of females 3.0 to 4.2 mm. Illustrations were made from the female holotype.

Diagnosis. *Metazygia limonal* differs from others by the Y-shaped posterior median plate of the epigynum (Fig. 293).

Distribution. From Depto. Madre de Dios, Peru, to northern Argentina (Map 4A).

Specimens Examined. BRAZIL *Rio Grande do Sul*: Santa Rosa, May 1955, 2♀ (C. Biezanko, AMNH). ARGENTINA *Misiones*: Puerto Rico, Dec. 1943, 1♀ (MACN).

***Metazygia tanica* new species**
Figures 295–297; Map 4A

Holotype. Male holotype from Botanical Gardens, Georgetown, Guyana, 22 Feb. 1959 (A. Nadler), in AMNH. The specific name is an arbitrary combination of letters.

Description. Male holotype. Cephalothorax orange, sternum lighter. Dorsum of abdomen light with faint dusky outline of folium (Fig. 297); venter light. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.6 diameter apart, 0.5 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1.3 diameters from later-

als. Height of clypeus equals 0.8 diameter of anterior median eye. Endite with minute tooth. Total length 4.2 mm. Carapace 2.5 mm long, 1.9 wide, 0.9 behind lateral eyes. First femur 2.3 mm, patella and tibia 2.7, metatarsus 2.0, tarsus 0.9. Second patella and tibia 2.4 mm, third 1.5, fourth 2.0.

Diagnosis. This male differs from *M. voluptifica* by having a structure (embolus or embolus lamella) of the palpus in a diagonal position with its sides almost parallel (Fig. 295).

Metazygia vaupes new species

Figures 298–302; Map 4A

Holotype. Female holotype from Mitú, Depto. Vaupés, 200 m, Colombia, Feb. 1975 (P. A. Schneble), in MCZ. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace yellowish. Chelicerae, labium, endites yellowish. Sternum yellowish. Legs yellowish. Dorsum of abdomen without color but with white pigment spots around anterior and sides (Fig. 301); venter with white pigment spots. Posterior median eyes 1.2 diameters of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.8 diameter apart, 0.3 diameter from laterals. Posterior median eyes 0.2 diameter apart, 0.8 diameter from laterals. Ocular quadrangle square. Height of clypeus equals 0.3 diameter of anterior median eye. Total length 3.1 mm. Carapace 1.17 mm long, 1.04 wide, 0.54 behind lateral eyes. First femur 1.52 mm, patella and tibia 1.82, metatarsus 1.35, tarsus 0.48. Second patella and tibia 1.53 mm, third 0.87, fourth 1.26.

Male from Depto. Loreto, Peru. Color as in female but anterior white band of abdomen less distinct. Posterior median eyes 0.9 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.7 diameter apart, 0.2 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1 diameter from laterals. Ocular quadrangle narrower behind than in front. Height of clypeus equals 0.6 diameter of anterior median eye. First coxa with small

hook. Second tibia thicker than first, with one long macroseta and several short ones distally, all in one line. Total length 2.0 mm. Carapace 1.2 mm long, 0.9 wide, 0.4 wide behind lateral eyes. First femur 1.4 mm, patella and tibia 1.7, metatarsus 1.2, tarsus 0.5. Second patella and tibia 1.3 mm, third 0.7, fourth 1.0.

Note. Males and females were collected in the same location in Rondônia, and both lack dark pigment dorsally on the abdomen.

Variation. Total length of females 3.1 to 3.2 mm. Illustrations were made from the female holotype and a male from Rondônia.

Diagnosis. The abdomen appears heart-shaped (Fig. 301). The epigynum is very distinct with a short rounded scape (Figs. 298, 299). The male has a shorter, smaller embolus lamella (Fig. 302) than *M. castaneoscutata* (Fig. 308).

Natural History. Specimens have been collected in grass and shrubs in Loreto, Peru, and rain forest in Rondônia, Brazil.

Distribution. Amazon region (Map 4A).

Specimens Examined. PERU Loreto: Río Manatee, 18 July 1989, 1♂ (G. B. Edwards, FSCA). Huánuco: Monzón Valley, Tingo María, 23 Sept. 1954, 1♀ (E. I. Schlinger, E. S. Ross, CAS). BRAZIL Rondônia: Fazenda Rancho Grande, NE Cacauplandia, 6–15 Dec. 1990, 1♀, 1♂ (G. B. Edwards, J. E. Eger, FSCA).

Metazygia castaneoscutata (Simon)

Figures 303–308; Map 4B

Araneus castaneoscutatus Simon, 1895: 806. Female holotype from Amazonas [specimen labeled as coming from Iquitos to Pebas, Peru], in MNHN, examined. Bonnet, 1955: 452.

Aranea castaneoscutata:—Roewer, 1942: 838.

Metazygia castaneoscutata:—Levi, 1991a: 177.

Description. Female holotype. Carapace light orange with a median black band. Chelicerae black. Labium, endites, sternum light orange. Legs dusky orange. Dorsum of abdomen with black band around anterior, continuing around sides of abdomen and meeting black ring around spinnerets (Figs. 306, 307); a narrow band of white pigment spots parallel to band on dorsum and a median dorsal dusky patch.

Venter with a dusky T-shaped mark and a black ring around spinnerets (Fig. 307). Posterior median eyes 0.7 diameter of anterior medians, laterals 0.5 diameter. Anterior median eyes 0.3 diameter apart, 0.2 diameter from laterals. Posterior median eyes 0.2 diameter apart, 0.8 diameter from laterals. Height of clypeus equals 0.3 diameter of anterior median eye. Total length 3.4 mm. Carapace 1.2 mm long, 1.0 wide, 0.5 wide behind lateral eyes. First femur 1.3 mm, patella and tibia 1.5, metatarsus 1.0, tarsus 0.4. Second patella and tibia 1.3 mm, third 0.7, fourth 1.1.

Male from Alto Río Comaina. Color as in female. Posterior median eyes 0.9 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.2 diameter apart, almost touching laterals. Posterior median eyes 0.2 diameter apart, 0.8 diameter from laterals. Height of clypeus equals 0.3 diameter of anterior median eye. Fourth coxa with a tiny macroseta on left side only. Second tibia thicker than first, both first and second with macrosetae. Total length 2.1 mm. Carapace 1.2 mm long, 0.9 wide, 0.5 behind lateral eyes. First femur 1.1 mm, patella and tibia 1.3, metatarsus 0.8, tarsus 0.4. Second patella and tibia 1.1 mm, third 0.6, fourth 0.8.

Note. Males and females were matched because of similar color and markings and because they were collected together.

Variation. The scape of the epigynum may be broken off (Fig. 304). Total length of females 3.1 to 4.5 mm, males 2.1 to 2.3. Illustrations were made from a female from the Tambopata Reservation and a male from Alto Río Comaina.

Diagnosis. *Metazygia castaneoscutata* can be separated from others by the spherical abdomen (Fig. 306) and its coloration. The epigynum has a longer scape (Fig.

303) than *M. vaupes* (Fig. 298) and a differently shaped posterior median plate (Fig. 305). The male has a longer embolus lamella (at 10 hr in Fig. 308) and more distinct conductor (center of Fig. 308) than *M. vaupes* (Fig. 302).

Natural History. Specimens came from forest interior near Manaus.

Distribution. Amazon region (Map 4B).

Specimens Examined. PERU *Amazonas:* Alto Río Comaina, Puesto da Vigilancia 22, Falso Paquisha, 850–1,150 m, Cordillera del Cóndor, 24 Oct. 1987, 1♂, 28 Oct. 1987, 1♀, 1♂ (D. Silva D., MUSM). *Madre de Dios:* Zona Reservada Tambopata, trocha principal, 290 m, 12°50'S, 69°17'W, 13–29 May 1988, 2♀ (D. Silva D., MUSM). BRAZIL *Amazonas:* Reserva Ducke, Manaus, 26 Mar. 1974, 1♀ (L. P. Albuquerque, MCN 20047); Reserva Campina, 22 Jan. 1973, 1♀ (MCN 20053); Reserva Cabo Frio, 80 km from Manaus, 23 Jan. 1991, 1♀; Colosso Reserve, 80 km from Manaus, 19 Mar. 1991, 1♂, 1♀, 4 June 1991, 1♀; Reserva Dimona, 80 km from Manaus, 26, 27 Mar. 1991, 3♀, 14, 15 May 1991, 2♀; km 41 Reserve, 80 km from Manaus, 17 Apr. 1991, 1♀ (all H. Fowler, E. Venticinque, R. S. Vieira, MCZ). *Mato Grosso:* Sinop, Oct. 1975, 1♀ (M. Alvarenga, AMNH); Jacaré, Xingu, Nov. 1961, 1♂ (Werner, AMNH).

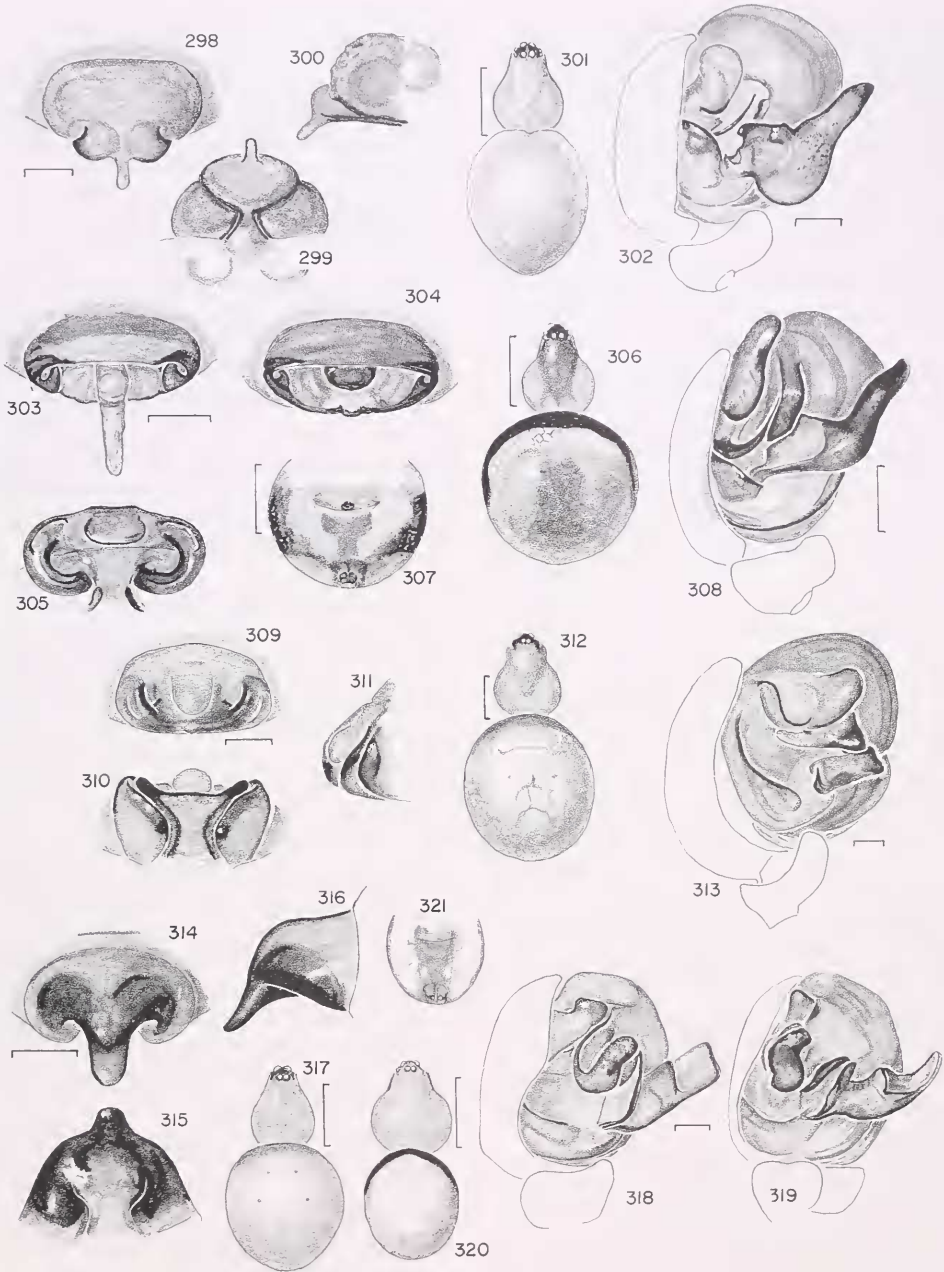
Metazygia octama new species Figures 309–313; Map 4B

Holotype. Female holotype from near Cali, 1,000 m elev., Depto. Valle, Colombia (W. Eberhard, no. 821), in MCZ. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace orange, eye region black, thoracic region lightest. Chelicerae, labium, endites orange. Sternum orange. Legs orange. Abdomen white with a black band around anterior (Fig. 312), venter with a white square between epigynum and spinnerets. Posterior median eyes 0.9 diameter of anterior medians, laterals 0.5 diameter. Anterior median eyes 0.6 diameter apart, 0.4 diameter from laterals. Posterior median

Figures 298–302. *Metazygia vaupes* n. sp. 298–301, female. 298–300, epigynum. 298, ventral. 299, posterior. 300, lateral. 301, dorsal. 302, left male palpus.

Figures 303–308. *M. castaneoscutata* (Simon). 303–307, female. 303–305, epigynum. 303, ventral. 304, ventral, scape torn. 305, posterior. 306, dorsal. 307, abdomen, ventral. 308, male palpus.



Figures 309–313. *M. octama* n. sp. 309–312, female. 309–312, epigynum. 309, ventral. 310, posterior. 311, lateral. 312, dorsal. 313, male palpus.

Figures 314–317. *M. floresta* n. sp., female. 314–316, epigynum. 314, ventral. 315, posterior. 316, lateral. 317, dorsal.

Figures 318–321. *M. mariahelena* n. sp., male. 318, 319, palpus. 318, mesal. 319, ventral. 320, dorsal. 321, abdomen, ventral.

Scale lines. 1.0 mm, genitalia 0.1 mm.

eyes 0.3 diameter apart, 1 diameter from laterals. Height of clypeus equals 0.5 diameter of anterior median eye. Total length 5.5 mm. Carapace 2.1 mm long, 1.6 wide, 0.8 behind lateral eyes. First femur 2.1 mm, patella and tibia 2.5, metatarsus 2.0, tarsus 0.7. Second patella and tibia 2.3 mm, third 1.4, fourth 2.0.

Male from type locality. Color as in female. Carapace with slight lobe. Posterior median eyes same diameter as anterior medians, anterior laterals 0.8 diameter. Anterior median eyes 0.8 diameter apart, 0.3 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1.1 diameters from laterals. Height of clypeus equals 0.6 diameter of anterior median eye. Third and fourth coxa each with one long macroseta. Second tibia thicker than first, with several large macrosetae. Total length 3.7 mm. Carapace 1.6 mm long, 1.3 wide, 0.5 wide behind lateral eyes. First femur 1.7 mm, patella and tibia 2.2, metatarsus 1.7, tarsus 0.6. Second patella and tibia 1.5 mm, third 1.0, fourth 1.5.

Note. Males and females were collected together.

Variation. Total length of females 4.1 to 5.1 mm, males 3.1 to 3.7. Illustrations were made from the female holotype and a male paratype.

Diagnosis. *Metazygia octama* females have a thicker epigynal scape (Figs. 309, 310) than *M. vaupes* (Fig. 298) and *M. castaneoscutata* (Fig. 303). In males the palpus has a hair-like, S-shaped embolus that lies between the transparent lamella and conductor (between center and at 11 hr in Fig. 313).

Natural History. A female and immatures were collected at night on a roadside shrub near Cali, Colombia. When living they were dark green with reddish first pair of legs.

Distribution. From Panama to Depto. Madre de Dios, Peru (Map 4B).

Paratypes. COLOMBIA *Valle:* nr. Cali, 3 Mar. 1973, 2 imm., 1♀ (H. Levi, W. Eberhard, MCZ), 1973–1974, 1♀, 5♂, 1976, 1♂, 1977, 1♂, 1983, 3♂ (W. Eberhard, MCZ),

no dates, 3♀, 1♂ (W. Eberhard no. 660, 667, 956, MCZ).

Specimens Examined. PANAMA *Panamá:* Forest Reserve, Aug. 1936, 1♂ (A. M. Chickering, MCZ). PERU *Madre de Dios:* 15 km E Puerto Maldonado, 26 Feb. 1989, 1♀ (D. Silva D., MUSM).

Metazygia floresta new species
Figures 314–317; Map 4B

Holotype. Female holotype from Floresta dos Macacos, Est. Guanabara [Est. Rio de Janeiro], Brazil, Feb. 1961 (M. Alvarenga), in AMNH. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange, eye region black. Chelicerae brown. Labium, endites dusky orange. Sternum orange. Legs orange. Dorsum of abdomen white with a dark band around the anterior (Fig. 317). Venter with a large white square between epigynum and spinnerets. Eyes large. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.7 diameter apart, 0.6 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1 diameter from laterals. Height of clypeus equals 0.3 diameter of anterior median eye. Total length 3.8 mm. Carapace 1.5 mm long, 1.0 wide, 0.5 behind lateral eyes. First femur 1.6 mm, patella and tibia 1.9, metatarsus 1.3, tarsus 0.5. Second patella and tibia 1.6 mm, third 0.9, fourth 1.3.

Diagnosis. Abdomen subspherical, flatter anteriorly, and slightly pointed posteriorly (Fig. 317). This female differs from all others in the smooth, sclerotized scape (Figs. 314–316) with fused plates in posterior view (Fig. 315).

Specimens Examined. BRAZIL *Rio de Janeiro:* Nova Iguaçu, Miguel Couto, July 1961, 1♀ (M. Alvarenga, AMNH).

Metazygia mariahelena new species
Figures 318–321; Map 4C

Holotype. Male holotype from Reserva Ducke, Manaus, Est. Amazonas, Brazil, Aug. 1971 (M. E. Galliano), in MACN. The species is named after the collector.

Description. Male holotype. Carapace light orange, eye region dusky. Chelicerae

dusky. Labium, endites dusky. Sternum dusky light orange. Legs light orange, distally dusky. Dorsum of abdomen white with black band around anterior (Fig. 320). Venter with white longitudinal band on each side of genital furrow (Fig. 321). Posterior median eyes 0.8 diameter of anterior medians, anterior laterals 0.7 diameter, posterior 0.5. Anterior median eyes their diameter apart, 0.6 diameter from laterals. Posterior median eyes 0.4 diameter apart, their diameter from laterals. Ocular quadrangle narrower behind than in front. Height of clypeus equals 0.6 diameter of anterior median eye. Fourth coxa with short macroseta. Second tibia thicker than first, with three to four strong macrosetae on distal quarter. Total length 2.8 mm. Carapace 1.4 mm long, 1.1 wide, 0.5 behind lateral eyes. First femur 1.5 mm, patella and tibia 2.0, metatarsus 1.5, tarsus 0.5. Second patella and tibia 1.4 mm, third 0.9, fourth 1.3.

Diagnosis. The male is distinguished by an embolus that points clockwise (center of Fig. 318) and a median apophysis that is rectangular in ventral view (at 3 hr in Fig. 318).

Metazygia nigrocincta (F. P.-Cambridge), new combination

Figures 322–327; Map 4G

Aranea nigrocincta F. P.-Cambridge, 1904: 513, pl. 49, figs. 11, 12, ♀, ♂. Female and male syntypes from Bugaba, Panama, in BMNH, lost. Roewer, 1942: 848.

Araneus nigrocinctus:—Bonnet, 1955: 550.

The types are lost. F. P.-Cambridge's illustration fits this species.

Description. Female from Fortín de los Flores, Veracruz, Mexico. Carapace orange, eye region black. Chelicerae dark brown. Labium, endites dark dusky orange. Sternum dusky orange. Coxae orange; legs dark dusky on orange. Dorsum of abdomen white with a black band across anterior (Fig. 525); venter with a white square (Fig. 326). Posterior median eyes 0.8 diameter of anterior medians, laterals

0.6 diameter. Anterior median eyes 0.7 diameter apart, 0.7 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.6 diameters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 4.0 mm. Carapace 1.9 mm long, 1.4 wide, 0.7 behind lateral eyes. First femur 1.8 mm, patella and tibia 2.3, metatarsus 1.5, tarsus 0.6. Second patella and tibia 2.0 mm, third 1.2, fourth 1.7.

Male from Veracruz, Mexico. Color as in female. Carapace with small lobes. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes 0.7 diameter apart, 0.7 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1.2 diameters from laterals. Height of clypeus equals 0.5 diameter of anterior median eye. First coxa with large hook, third and fourth each with a short macroseta. Total length 2.7 mm. Carapace 1.4 mm long, 1.2 wide, 0.6 behind lateral eyes. First femur 1.6 mm, patella and tibia 1.8, metatarsus 1.2, tarsus 0.5. Second patella and tibia 1.5 mm, third 0.9, fourth 1.3.

Note. Males and females were collected together.

Variation. Total length of females 3.8 to 4.7 mm, males 2.5 to 2.7. Some males have macrosetae on the fourth coxae only, not on the third. Specimens from Jalisco, Mexico, have two white spots on the underside of the abdomen. Illustrations were made from specimens from Veracruz, Mexico.

Diagnosis. The female's abdomen is subspherical, widest anteriorly (Fig. 325). Females of this species are distinguished from those of *M. lagiana* (Figs. 328, 329) by having a thin, straight epigynal scape (Fig. 322) and a Y-shaped posterior median plate with openings at the end of the arms (Figs. 323, 328, 329). The male's palpus has an undulating median apophysis (Fig. 327) that is similar to that of *M. castaneoscutata* (Fig. 308) but is narrower at its base. The embolus lamella of this species (at 11 hr in Fig. 327) does not extend

beyond the cymbium tip as it does in *M. castaneoscutata*.

Distribution. Mexico to Panama (Map 4G).

Specimens Examined. MEXICO *San Luis Potosí:* Tamanzunchale, 27 Sept. 1939, 1♀ (C. M. Bogert, H. E. Vokes, AMNH). *Jalisco:* 16.3 km NE La Huerta, 6 Aug. 1967, 1♀ (R. E. Leech, REL); Esta. Biol. Chamela, 100 m, Sept. 1988, 2♀, 3♂, Sept. 1990, 1♀ (W. Eberhard, MCZ). *Veracruz:* Fortín de las Flores, 18°53'N, 96°53'W, 25 Apr. 1963, 1♀ (W. Gertsch, W. Ivie, AMNH); Tlapacoyan, 300 m, 7, 8 July 1946, 2♂ (H. Wagner, AMNH); Los Tuxtlas Biol. Sta., 9–29 July 1990, 1♀ (B. Traw, MCZ); Canyon of Río Metlac, nr. El Fortín [?], 17 Dec. 1948, 1♀ (H. B. Leech, CAS). HONDURAS Tela, 1–17 Apr., 1♂ (F. Dybas, AMNH). PANAMA *Chiriquí:* Boquete, July 1939, 1♀ (A. M. Chickering, MCZ).

Metazygia lagiana new species

Figures 328–332; Map 4C

Holotype. Female holotype from Cataratas de Iguacú, Misiones Prov., Argentina, 5 Oct. 1963 (M. E. Galiano), in MACN. The species name is an arbitrary combination of letters.

Description. Female. Carapace shiny with head black grading into the orange sides of the thoracic region. Chelicerae, labium, endites dark brown. Sternum black. Coxae yellow; legs yellow with black ring around end of first tibiae. Dorsum of abdomen white, with black band around anterior and black spots posteriorly (Fig. 330); venter with black median band from pedicel to and enclosing spinnerets (Fig. 331). Posterior median eyes 1 diameter of anterior medians, anterior laterals 1 diameter, posterior 0.8. Anterior median eyes their diameter apart, 0.7 from laterals. Posterior median eyes 0.5 their diameter apart, 1.7 from laterals. Height of clypeus equals 0.5 diameter of anterior median eye. Total length 4.0 mm. Carapace 1.5 mm

long, 1.3 wide, 0.7 behind lateral eyes. First femur 1.5 mm, patella and tibia 1.9, metatarsus 1.2, tarsus 0.6. Second patella and tibia 1.6 mm, third 1.0, fourth 1.4.

Male paratype. Color differs from that of female: carapace orange with eye region black, sternum orange. Abdomen with anterior black band, venter with a wider than long white rectangle. Posterior median eyes 0.8 diameter of anterior medians, anterior laterals 0.5 diameter, posterior laterals 0.4. Anterior median eyes 0.8 diameter apart, 0.8 from laterals. Posterior median eyes 0.3 diameter apart, slightly more than one from laterals. First coxae with large hook on venter, third and fourth each with a macroseta. Second tibiae thicker than first with long macroseta almost in middle on venter. Total length 2.9 mm. Carapace 1.7 mm long, 1.4 wide. First femur 1.8 mm, patella and tibia 2.2, metatarsus 1.6, tarsus 0.6. Second patella and tibia 1.5 mm, third 0.9, fourth 1.4.

Note. Male and female were collected at the same locality.

Variation. Total length of females 3.7 to 4.0 mm.

Diagnosis. The female differs from that of *M. nigrocincta* by having an epigynal scape that is thin, bent, and transparent (Fig. 328) and a posterior median plate upside-down heart-shaped (Fig. 329). The male palpus features a knob-shaped median apophysis (at 4 hr in Fig. 332).

Natural History. A female has been collected in cerrado scrub in Mato Grosso, Brazil.

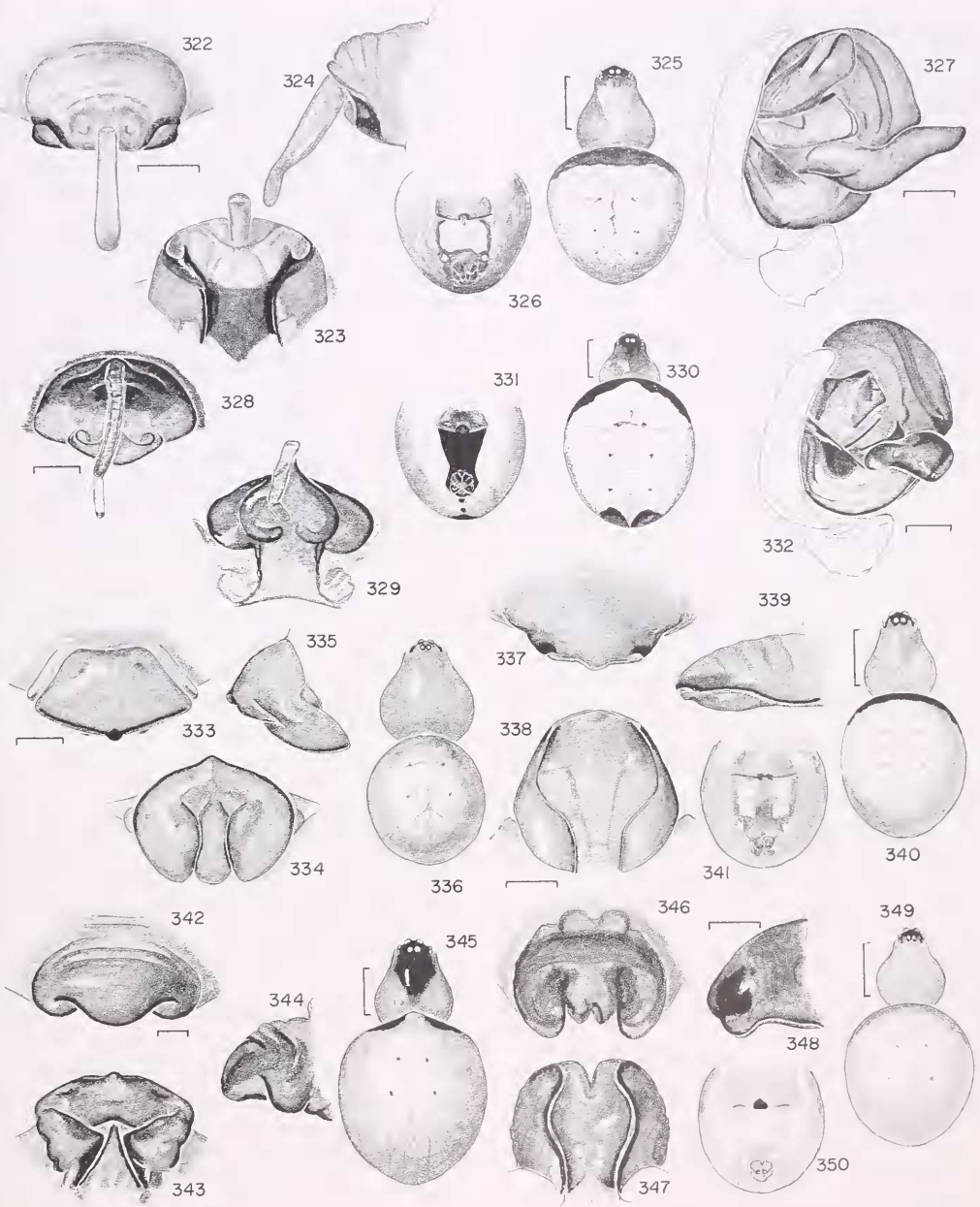
Distribution. Depto. Madre de Dios, Peru, to northern Argentina (Map 4C).

Paratypes. ARGENTINA *Misiones:* Gral. Belgrano, Jan. 1966, 1♀; Dec. 1972, 1♂ (M. E. Galiano, MACN).

Figures 322–327. *Metazygia nigrocincta* (F. P.-Cambridge). 322–326, female. 322–324, epigynum. 322, ventral. 323, posterior. 324, lateral. 325, dorsal. 326, abdomen, ventral. 327, left male palpus.

Figures 328–332. *M. lagiana* n. sp. 328–331, female. 328, 329, epigynum. 328, ventral. 329, posterior. 330, dorsal. 331, abdomen, ventral. 332, male palpus.

Figures 333–336. *M. carimagua* n. sp., female. 333–335, epigynum. 333, ventral. 334, posterior. 335, lateral. 336, dorsal.



Figures 337–341. *M. louqe* n. sp., female. 337–339, epigynum. 337, ventral. 338, posterior. 339, lateral. 340, dorsal. 341, abdomen, ventral.

Figures 342–345. *M. cienaga* n. sp., female. 342–344, epigynum. 342, ventral. 343, posterior. 344, lateral. 345, dorsal.

Figures 346–350. *M. souza* n. sp., female. 346–348, epigynum. 346, ventral. 347, posterior. 348, lateral. 349, dorsal. 350, abdomen, ventral.

Scale lines. 1.0 mm, genitalia 0.1 mm.

Specimens Examined. PERU *Madre de Dios*: Reserva de Manu, Puesta de Vigilancia Pakitza, 11°58'S, 71°18'W, 6 Oct. 1987, 1♀ (D. Silva D., J. Coddington, USNM). BRAZIL *Mato Grosso*: 260 km N Xavantina, 12°49'S, 51°46'W, Feb., Apr. 1969, 1♀ (Xavantina Cachimbo Exped., MCZ). BOLIVIA *Beni*: Est. Biol. Beni, 14°47'S, 66°15'W, ca. 225 m, 8–14 Nov. 1989, 1♀ (J. Coddington, USNM).

Metazygia carimagua new species

Figures 333–336; Map 4C

Holotype. Female holotype and one female paratype from Carimagua, 100 m, Depto. Meta, Colombia, Oct. 1973, grass and bushes along fence (W. Eberhard), in MCZ. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange. Chelicerae, labium, endites orange. Sternum, legs orange. Dorsum of abdomen white, with an indistinct pair of dusky patches anteriorly (Fig. 336). Venter with white transverse bar of white pigment spots behind epigynum. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.3 diameter apart, 0.9 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1.5 diameters from laterals. Height of clypeus equals 0.6 diameter of anterior median eye. Total length 3.4 mm. Carapace 1.6 mm long, 1.2 wide, 0.7 behind lateral eyes. First femur 1.7 mm, patella and tibia 2.1, metatarsus 1.7, tarsus 0.6. Second patella and tibia 1.6 mm, third 0.9, fourth 1.4.

Diagnosis. The species lacks black pigment, even in the eye region (Fig. 336). The epigynum differs from that of other species by having a pentagonal shape in ventral view (Fig. 333) and a narrow posterior median plate (Fig. 334).

Specimen Examined. COLOMBIA *Meta*: Carimagua, 100 m, 1♀ (W. Eberhard 633, MCZ).

Metazygia loque new species

Figures 337–341; Map 4C

Holotype. Female holotype from Rurrenabaque, Beni, Bolivia, Oct.–Nov. 1956 (L. Peña), in IRSNB. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace orange-yellow, cephalic region dusky.

Chelicerae brown. Labium, endites brown. Sternum dusky orange, borders darkest. Coxae, legs orange-yellow with distal articles darkest. Dorsum of abdomen with dense white pigment spots, anterior with black transverse band (Fig. 340); venter with a pair of white longitudinal bands and a pair of white spots on light gray (Fig. 341). Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes 0.8 diameter apart, 0.6 diameter from laterals. Posterior median eyes 0.2 diameter apart, 0.9 diameter from laterals. Height of clypeus equals 0.7 diameter of anterior median eye. Total length 4.5 mm. Carapace 1.7 mm long, 1.2 wide, 0.7 behind lateral eyes. First femur 1.9 mm, patella and tibia 2.3, metatarsus 1.6, tarsus 0.5. Second patella and tibia 2.0 mm, third 1.1, fourth 1.5.

Diagnosis. The abdomen is oval, widest in middle, and slightly flattened anteriorly (Fig. 340). The female is distinguished by having an epigynum that is flat, ventrally projecting, and longer than wide (Figs. 337–339).

Metazygia cienaga new species

Figures 342–345; Map 4D

Holotype. Female holotype from along Arroyo Frio, La Ciénaga, Prov. La Vega, 19°04'N, 70°51'W, Dominican Republic, 8 Jan. 1986 (S. Larcher), in USNM. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange, cephalic region black. Chelicerae, labium, endites orange. Sternum orange. Coxae orange, legs dusky orange. Dorsum of abdomen white with two anterior black marks that are fused ventrally above carapace (Fig. 345). Venter white, with large white square between epigynum and spinnerets. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.7 diameter apart, 0.8 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.5 diameters from laterals. Height of clypeus equals 0.3 diameter of anterior median eye. Total length 5.2 mm. Cara-

pace 2.3 mm long, 1.7 wide, 0.9 behind lateral eyes. First femur 2.2 mm, patella and tibia 2.7, metatarsus 1.8, tarsus 0.8. Second patella and tibia 2.2 mm, third 1.4, fourth 1.9.

Diagnosis. The abdomen is oval, widest in middle, anteriorly flattened slightly with median protuberance (Fig. 345). The epigynum has a median, wide lobe (Fig. 342) and a triangular, posterior median plate (Fig. 343).

***Metazygia souza* new species**

Figures 346–350; Map 4D

Holotype. Female holotype from Ilha de Maracá, Rio Uraricoera, Roraima State, Brazil, 25 Sept. 1987 (M. E. L. Souza), in MCN no. 20059. The specific name is a noun in apposition after the collector.

Description. Female holotype. Carapace yellow, eye region black. Chelicerae dusky yellow. Labium, endites, sternum yellow. Coxae, legs yellow. Dorsum of abdomen with dense white pigment and a black band around the anterior (Fig. 349), sides and venter without pigment (Fig. 350). Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.6 diameter apart, 0.6 diameter from laterals. Posterior median eyes 0.4 diameter apart, 1.3 diameters from laterals. Height of clypeus equals 0.2 diameter of anterior median eye. Total length 4.0 mm. Carapace 1.5 mm long, 1.2 wide, 0.6 behind lateral eyes. First femur 1.7 mm, patella and tibia 2.1, metatarsus 1.5, tarsus 0.6. Second patella and tibia 1.7 mm, third 1.0, fourth 1.5.

Diagnosis. Unlike that of other species, the epigynum of *M. souza* has a posterior median notch (Figs. 346, 347).

***Metazygia lopez* new species**

Figures 351–359; Map 4D

Holotype. Female holotype and one female and six male paratypes from Hacienda Mozambique, 15 km SW Puerto Lopez, 500 m elev., Depto. Meta, Colombia (W. Eberhard), in MCZ. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace, sternum, legs yellow; legs with tips

of tarsi black. Dorsum of abdomen with white pigment and a dusky band that is broken in middle around anterior (Fig. 355). Venter white behind epigynum, with transverse dark mark in front of spinnerets (Fig. 356). Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes a little less than their diameter apart, a little less than their diameter from laterals. Posterior median eyes 0.3 their diameter apart, 1.7 from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 4.2 mm. Carapace 1.7 mm long, 1.2 wide, 0.6 behind lateral eyes. First femur 1.8 mm, patella and tibia 2.1, metatarsus 1.7, tarsus 0.7. Second patella and tibia 1.7 mm, third 1.0, fourth 1.4.

Male paratype. Coloration as in female. Carapace shiny with indistinct round thoracic depression enclosing a median longitudinal mark. Posterior median eyes 1 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes their diameters apart, 0.5 from laterals. Posterior median eyes almost touching, 1.7 diameters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. First coxae with small hook. Fourth coxae with a pointed tubercle. Abdomen oval, longer than wide. Total length 2.8 mm. Carapace 1.5 mm long, 1.1 wide, 0.5 behind lateral eyes. First femur 1.7 mm, patella and tibia 2.2, metatarsus 1.7, tarsus 0.7. Second patella and tibia 1.6 mm, third 0.9, fourth 1.2.

Note. Males and females have been collected together. The epigynum of some specimens is completely covered by amorphous hard material, probably placed there by the male after mating.

Variation. Total length of females 3.2 to 4.5 mm. Eberhard (personal communication) reports the species to be green when alive. Illustrations were made from the holotype and paratypes.

Diagnosis. The abdomen is spherical (Figs. 355, 356) and, unlike many species, the eye region of the carapace is light in color (Fig. 355) and the posterior median

plate of the epigynum is dumbbell-shaped (Fig. 352). The male has a tubercle on the fourth coxa and a complex-shaped conductor (C in Fig. 359) and a long, thorn-shaped embolus (E in Figs. 357–359).

Natural History. Specimens have been collected in grass and brush along a fence in Carimagua, Colombia; in grassland jungle at Puerto Lleras, Colombia; and in savanna, fogging trees, in Venezuela.

Distribution. Venezuela, Amazon region (Map 4D).

Specimens Examined. VENEZUELA *Guárico:* Mato Masaquaral, 45 km S Calabozo, 19 Apr. 1980, 1♀ (K. Rabenold, MCZ). COLOMBIA *Meta:* Carimagua, 100 m, Oct. 1973, 1♀, 1♂ (W. Eberhard, MCZ); Hacienda Mozambique, 15 km SW Puerto Lopez, 11♀, 1♂ (W. Eberhard, MCZ); Lomalinda, Puerto Lleras, 3°18'N, 73°22'W, 12 Jan. 1986, 1♀ (B. T. Carroll, MCZ), Sept. 1987, 2♀ (B. T. Carroll, CAS). PERU *Ucayali:* Laguna Cashibocochoa, 25 km nr. Pucallpa, 30 Dec. 1987, 1♀ (M. Remo, MUSM). BRAZIL *Amazonas:* Lago do José, Manaus, 9 Aug. 1979, 1♀ (J. Adis, MCN 20057); Ilha de Curari, Manaus, 3 Aug. 1987, 1♀ (J. Adis, MCN 20056); Ilha de Marchantaria, Rio Solimões, 59°58'W, 3°15'S, 2 Sept. 1992, 4♂ (J. Adis *et al.*, INPA).

Metazygia samiria new species

Figures 360–364; Map 4D

Holotype. Female holotype and three female paratypes from Río Samiria, fogging and night collecting, Depto. Loreto, Peru, 8–31 May 1990 (T. Erwin, D. Silva D.), in MUSM, one paratype in MCZ. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace light orange, cephalic region darker, eye area black. Chelicerae brown-black. Labium, endites dusky orange. Sternum orange with sides dusky. Legs orange with indistinct darker dusky rings. Dorsum of abdomen black around anterior, otherwise

light (Fig. 363). Venter gray to black with a pair of white patches between epigynum and spinnerets and with white anteriorly on sides of pedicel (Fig. 364). Posterior median eyes 0.9 diameter of anterior medians, laterals 0.9 diameter. Anterior median eyes 0.7 diameter apart, 0.6 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.4 diameters from laterals. Height of clypeus equals 0.7 diameter of anterior median eye. Total length 5.6 mm. Carapace 2.1 mm long, 1.6 wide, 0.8 behind lateral eyes. First femur 2.1 mm, patella and tibia 2.7, metatarsus 1.9, tarsus 0.7. Second patella and tibia 2.5 mm, third 1.3, fourth 2.1.

Variation. Total length of females 4.5 to 5.7 mm. Illustrations were made from the female holotype.

Diagnosis. *Metazygia samiria* differs from *M. ducke* in the shape of the lateral plates in posterior view of the epigynum (Fig. 361).

Distribution. Western Amazon region (Map 4D).

Specimens Examined. PERU *Huánuco:* Dantas-La Molina, SW Puerto Inca, 09°28'S, 75°00'W, 22 May 1987, 1♀ (D. Silva D., MUSM); Cucharas, Huallaga Valley, Feb.–Apr. 1954, 1♀ (F. Woytkowski, CAS). *Madre de Dios:* 15 km E Puerto Maldonado, 12°33'S, 69°03'W, 26 Feb. 1989, 1♀ (D. Silva D., MUSM); Zona Reservada Tambopata, trocha principal, 290 m, 12°50'S, 69°17'W, 6♀ (D. Silva D., MUSM).

Metazygia ducke new species

Figures 365–369; Map 4D

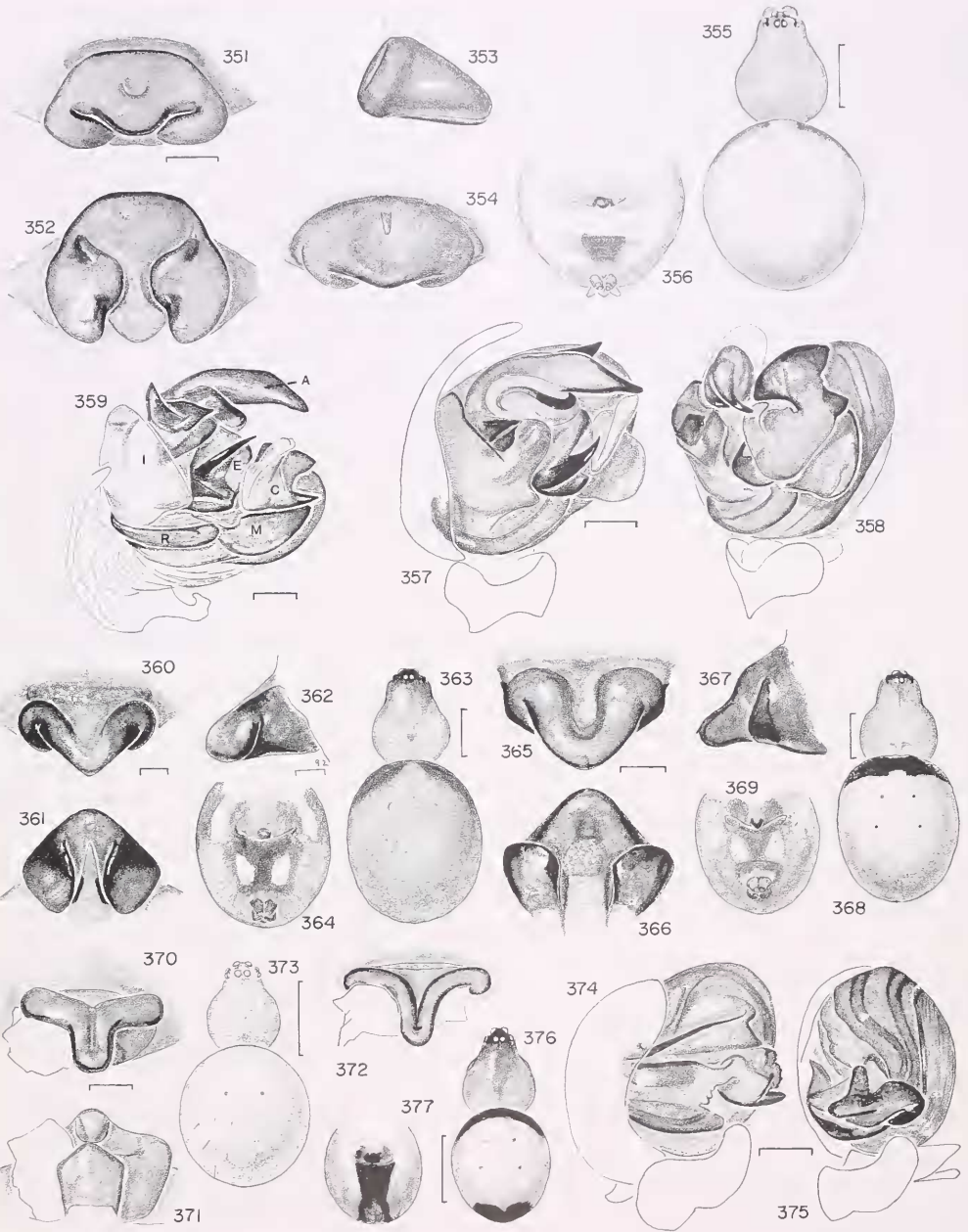
Holotype. Female holotype from Reserva Ducke, Manaus, Est. Amazonas, Brazil, Aug. 1971 (M. E. Galiano), in MACN. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange. Chelicerae brown. Labium,

Figures 351–359. *Metazygia lopez* n. sp. 351–356, female. 351–354, epigynum. 351, 354, ventral. 352, posterior. 353, lateral. 351–353, (Colombia). 354, (Brazil). 355, dorsal. 356, abdomen, ventral. 357–359, left male palpus. 357, mesal. 358, ventral. 359, mesal, pulled apart.

Figures 360–364. *M. samiria* n. sp., female. 360–362, epigynum. 360, ventral. 361, posterior. 362, lateral. 363, dorsal. 364, abdomen, ventral.

Figures 365–369. *M. ducke* n. sp., female. 365–367, epigynum. 365, ventral. 366, posterior. 367, lateral. 368, dorsal. 369, abdomen, ventral.



Figures 370–373. *M. erratica* (Keyserling), female. 370, 372, epigynum. 370, 372, ventral. 371, posterior. 371, (Mato Grosso). 372, (Holotype). 373, dorsal.

Figures 374–377. *M. manu* n. sp., male. 374, 375, palpus. 374, mesal. 375, ventral. 376, dorsal. 377, abdomen, ventral.

Abbreviations. A, terminal apophysis; C, conductor; E, embolus; I, stipes; M, median apophysis; R, radix.

Scale lines. 1.0 mm, genitalia 0.1 mm.

endites brown. Sternum orange, dusky on each side. Coxae and legs orange with distal articles of legs darker. Dorsum of abdomen with dense white pigment spots and an anterior transverse black band (Fig. 368). Venter with a pair of white patches on gray (Fig. 369). Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes 0.6 diameter apart, 0.5 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1 diameter from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 5.0 mm. Carapace 2.1 mm long, 1.5 wide, 0.8 behind lateral eyes. First femur 2.1 mm, patella and tibia 2.7, metatarsus 1.8, tarsus 0.6. Second patella and tibia 2.3 mm, third 1.2, fourth 1.9.

Variation. The specimen from Bolivia has a black sternum and other minor differences.

Diagnosis. *Metazygia ducke* differs from *M. samiria* (Fig. 361) by the shape of the lateral plates in posterior view of the epigynum and the square median plate, which has a textured area at its ventral end (Fig. 366).

Distribution. Amazon region (Map 4D).

Specimens Examined. BOLIVIA Beni: Est. Biol. Beni, 14°47'S, 66°15'W, 225 m, 8–14 Nov. 1989, 1♀ (J. Coddington *et al.*, USNM).

Metazygia erratica (Keyserling),
new combination

Figures 370–373; Map 4E

Epeira erratica Keyserling, 1883: 197, pl. 15, fig. 3, ♀. Female holotype from "Provinz Amazonas," Brazil, in HECO, examined. Keyserling, 1892: 161, pl. 8, fig. 119, ♀.

Aranea errans Roewer, 1942: 841. New name for *erratica*, since thought preoccupied by *Aranea erratica* Olivier, 1789.

Araneus erraticus:—Bonnet, 1955: 501.

Description. Female holotype. Carapace orange. Chelicerae, labium, endites orange. Sternum, coxae, legs light orange. Abdomen whitish (Fig. 373). Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median

eyes 0.3 diameter apart, 0.7 from laterals. Posterior median eyes 0.6 diameter apart, 1.4 diameters from laterals. Height of clypeus 0.5 diameter of anterior median eye. Legs without macrosetae. Total length 2.9 mm. Carapace 1.4 mm long, 0.9 wide, 0.6 behind lateral eyes. First femur 1.5 mm, patella and tibia 1.7, metatarsus 1.2, tarsus 0.6. Second patella and tibia 1.3 mm, third 0.7, fourth 1.1.

Variation. Keyserling records a silvery coloration of the abdomen; the specimens available have lost all pigment. Total length 2.9 to 3.9 mm. Figure 372 was made from the holotype; Figures 370, 371, and 373 are from a specimen from Mato Grosso.

Diagnosis. The absence of black in the eye region (Fig. 373) and the thick folded lips of the epigynum in ventral view (Figs. 370, 372) separate *M. erratica* from *M. samiria* and similar species. All specimens had black amorphous material covering the openings of the epigynum (on the left of Figs. 370–372) which was not found in related species.

Specimens Examined. BRAZIL Mato Grosso: Barra do Tapirapé, 1–5 Jan. 1961, 1♀ (B. Malkin, AMNH); Utiariti, 25 Oct. 1966, 1♀ (F. Lenko, Pereira, MZSP 6064).

Metazygia manu new species
Figures 374–377; Map 4E

Holotype. Male holotype from Puesto de Vigilancia Pakitza, Zona Reservada de Manu, Depto. Madre de Dios, 11°58'S, 71°18'W, Peru, night collecting, 30 Sept. 1987 (D. Silva D., J. Coddington), in MUSM. The specific name is a noun in apposition after the type locality.

Description. Male holotype. Carapace orange, cephalic area gray, black between eyes. Chelicerae, labium, endites black. Sternum black. Coxae light orange; legs orange except for black ring distally on first tibia. Dorsum of abdomen white with anterior transverse black band, and posterior pair of black patches that fuse to a median band above spinnerets (Fig. 376). Venter with distinct black band covering both genital area and spinnerets and continuing into dorsal black patches (Fig. 377).

Carapace with double border above first coxae. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.5 diameter apart, 0.2 diameter from laterals. Posterior median eyes 0.3 diameter apart, their diameter from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Second tibia thicker than first, with a macroseta on swollen area. Total length 2.7 mm. Carapace 1.24 mm long, 1.04 wide, 0.54 behind lateral eyes. First femur 1.03 mm, patella and tibia 1.18, metatarsus 0.75, tarsus 0.38. Second patella and tibia 1.14 mm, third 0.81, fourth 1.12.

Diagnosis. The male palpus differs from others by having a long, fine, "diagonal," embolus (Fig. 374) and by the complex shape of the median apophysis (at 4 hr in Fig. 374, below center of Fig. 375).

Metazygia genaro new species

Figures 378–384; Map 4E

Holotype. Female holotype from Genaro Herrera, 04°55'S, 73°45'W, Depto. Loreto, Peru, 26 Aug. 1988 (D. Silva D.), in MUSM. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace light orange, cephalic region brown, eye area black. Chelicerae dark brown. Labium, endites, sternum brown. Coxae orange; first two legs dark brown, last two orange. Dorsum of abdomen white with a black band around anterior (Fig. 381); venter with a pair of white patches (Fig. 382). Posterior median eyes same diameter as anterior medians, laterals 0.7 diameter. Anterior median eyes 0.8 diameter apart, 0.6 diameter from laterals. Posterior median eyes 0.4 diameter apart, 1.1 diameters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 4.3 mm. Carapace 1.7 mm long, 1.3 wide, 0.7 behind lateral eyes. First femur 1.9 mm, patella and tibia 2.1, metatarsus 1.5, tarsus 0.5. Second patella and tibia 1.8 mm, third 1.1, fourth 1.6.

Male. As in female, but orange areas more yellowish (Fig. 384); venter with a pair of white pigment patches on gray (Fig.

382). Carapace with lobes above first coxae (Fig. 384). Posterior median eyes same diameter as anterior medians, laterals 0.7 diameter. Anterior median eyes 0.8 diameter apart, 0.2 diameter from laterals. Posterior median eyes 0.3 diameter apart, 0.8 diameter from laterals. Ocular quadrangle narrower behind than in front. Height of clypeus equals 0.4 diameter of anterior median eye. First coxa with hook, third and fourth each with macroseta on a soft tubercle. Second tibia thicker than first with macrosetae, one of them long. Total length 2.5 mm. Carapace 1.30 mm long, 1.04 wide, 0.48 behind lateral eyes. First femur 1.49 mm, patella and tibia 1.91, metatarsus 1.40, tarsus 0.52. Second patella and tibia 1.31 mm, third 0.80, fourth 1.14.

Note. Male and female were matched because in both the anterior dorsal bands of the abdomen are intense black, with white adjacent to the black both anteriorly and posteriorly. Both sexes have a pair of white patches on black on the underside of the abdomen (Fig. 382). Male and female did not come from the same locality.

Diagnosis. A broad, triangular epigynal scape as seen in ventral view (Fig. 378) distinguishes the female. Males are distinguished from *M. voxanta* by the shape of the palpal sclerites (Fig. 383).

Distribution. Depto. Loreto, Peru (Map 4E).

Specimen Examined. PERU Loreto: Río Manatee [a tributary of the Amazon between Explorers Lodge and Río Napo], 18 July 1989, grass and shrubs, 1♂ (G. B. Edwards, FSCA).

Metazygia voxanta new species

Figures 385–390; Map 4E

Holotype. Female holotype, female paratype, and two male paratypes from 260 km N Xavantina, 12°49'S, 51°46'W, 400 m, Mato Grosso State, Brazil, campo-grassland, Feb.–Apr. 1969 (Xavantina-Cachimbo Expedition), 1♀ holotype and 1♂ paratype in MCN, others in MCZ. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace orange, eye region black. Chelicerae, labium, endites brownish. Sternum orange. Coxae, legs orange. Dorsum of ab-

domen white, with anterior and posterior black marks (Fig. 388). Venter dusky with few irregularly spaced white pigment spots. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.8 diameter apart, 0.5 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1 diameter from laterals. Height of clypeus equals 0.5 diameter of anterior median eye. Total length 2.5 mm. Carapace 0.9 mm long, 0.7 wide, 0.4 behind lateral eyes. First femur 0.8 mm, patella and tibia 1.0, metatarsus 0.6, tarsus 0.4. Second patella and tibia 0.9 mm, third 0.5, fourth 0.7.

Male paratype. Color as in female. The carapace has a lobe above the first coxa (Fig. 390). Posterior median eyes 0.7 diameter of anterior medians, laterals 0.5 diameter. Anterior median eyes 0.3 diameter apart, 0.2 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1 diameter from laterals. Height of clypeus equals 0.8 diameter of anterior median eye. First coxa with hook, fourth with one short macroseta. Second tibia thicker than first, with four macrosetae on distal half. Total length 2.0 mm. Carapace 1.0 mm long, 0.8 wide, 0.4 behind lateral eyes. First femur 0.8 mm, patella and tibia 1.1, metatarsus 0.6, tarsus 0.4. Second patella and tibia 0.9 mm, third 0.5, fourth lost.

Note. Males and females were collected together.

Diagnosis. The epigynum has two lobes in ventral view (Fig. 385) and an hour-glass-shaped median plate in posterior view (Fig. 386). The male is similar to that of *M. genaro* but has an embolus lamella and

a median apophysis of different shape (Fig. 389).

Metazygia peckorum new species

Figures 391–400; Map 4F

Holotype. Female from La Chiquita, 5 m elev., 11 km SE San Lorenzo, Esmeraldas Prov., Ecuador, 3–10 June 1975 (S. and J. Peck), in MCZ. The species is named after the collectors.

Description. Female holotype. Carapace light orange, cephalic region dusky. Chelicerae, labium, endites brown. Sternum black. Coxae light orange. First two pairs of legs brown, except for proximal end of femora light orange, last two pairs of legs light orange. Dorsum of abdomen white with anterior dark band (Fig. 399). Venter black with a pair of white patches (Fig. 400). Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.7 diameter apart, 0.7 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.1 diameters from laterals. Height of clypeus equals 0.8 diameter of anterior median eye. Total length 4.6 mm. Carapace 1.9 mm long, 1.5 wide, 0.8 behind lateral eyes. First femur 2.0 mm, patella and tibia 2.3, metatarsus 1.7, tarsus 0.6. Second patella and tibia 2.0 mm, third 1.2, fourth 1.8.

Variation. Total length of females 4.0 to 5.1 mm.

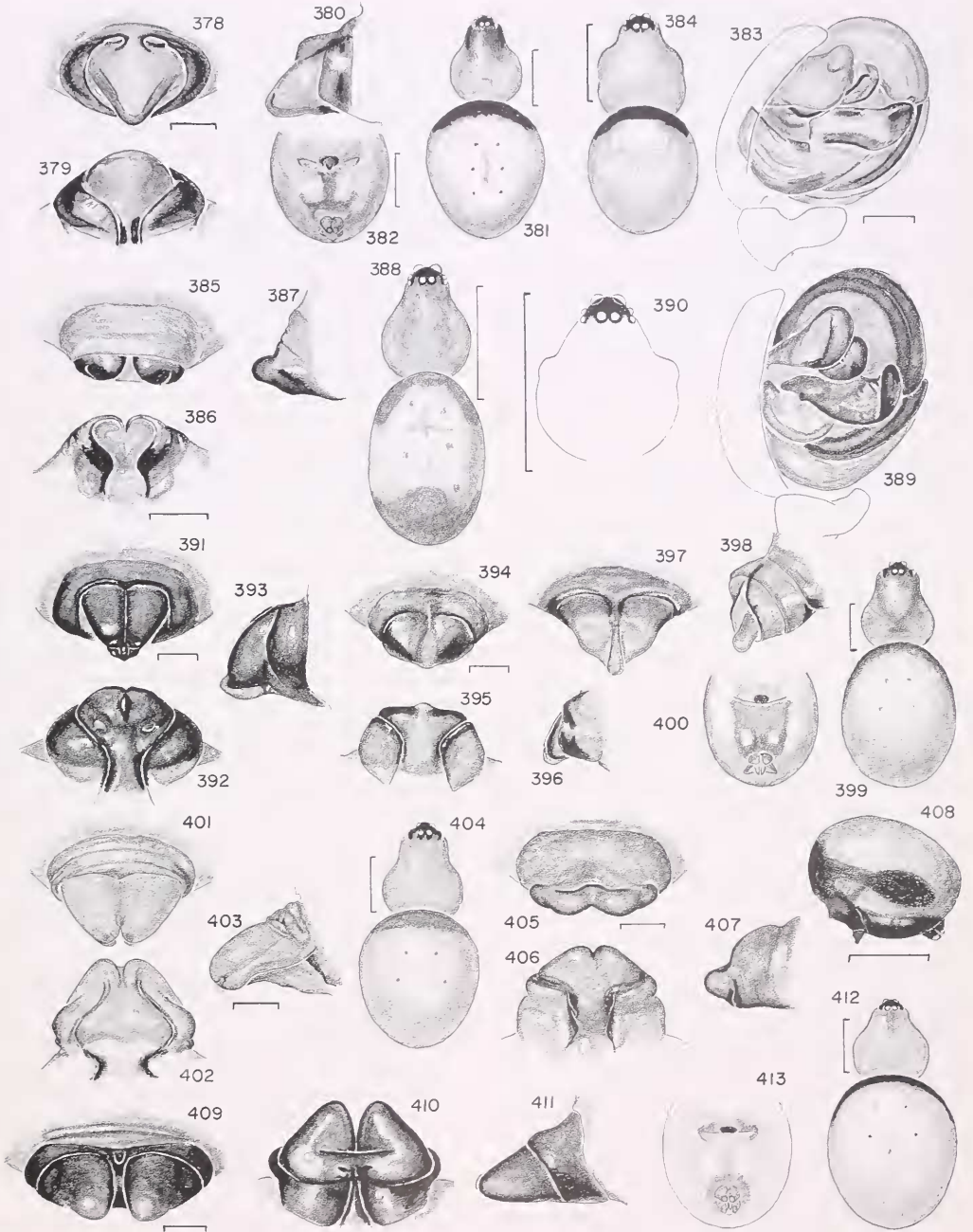
Diagnosis. The oval to triangular median area of the epigynum has a longitudinal groove and a minute flat scape at its tip (Figs. 391, 394, 397), and the posterior median plate is constricted dorsally in pos-

Figures 378–384. *Metazygia genaro* n. sp. 378–382, female. 378–380, epigynum. 378, ventral. 379, posterior. 380, lateral. 381, dorsal. 382, abdomen, ventral. 383, 384, male. 383, left palpus. 384, dorsal.

Figures 385–390. *M. voxanta* n. sp. 385–388, female. 385–387, epigynum. 385, ventral. 386, posterior. 387, lateral. 388, dorsal. 389, 390, male. 389, palpus. 390, carapace.

Figures 391–400. *M. peckorum* n. sp., female. 391–398, epigynum. 391, 394, 397, ventral. 392, 395, posterior. 393, 396, 398, lateral. 391–393, (Peru). 394–396, (holotype, Ecuador). 397, 398 (Pará, Brazil). 399, dorsal. 400, abdomen, ventral.

Figures 401–404. *M. moldira* n. sp., female. 401–403, epigynum. 401, ventral. 402, posterior. 403, lateral. 404, dorsal.



Figures 405–408. *M. valentim* n. sp., female. 405–407, epigynum. 405, ventral. 406, posterior. 407, lateral. 408, abdomen, lateral.

Figures 409–413. *M. bahia* n. sp., female. 409–411, epigynum. 409, ventral. 410, posterior. 411, lateral. 412, dorsal. 413, abdomen, ventral.

Scale lines. 1.0 mm, genitalia 0.1 mm.

terior view (Figs. 392–395): these characters separate *M. peckorum* from *M. moldira* (Figs. 401, 402).

Distribution. From Colombia to Bahia State, Brazil (Map 4F).

Specimens Examined. COLOMBIA *Valle*: Central Hidroeléctrica Anchicayá, 1978, 1♀ (W. Eberhard, MCZ). ECUADOR *Los Ríos*: Juan Montalvo, Mar. 1938, 1♀ (W. Clarke-Macintyre, AMNH). PERU *Huánuco*: Monzón Valley, Tingo María, 10 Nov. 1954, 1♀ (E. I. Schlinger, E. S. Ross, CAS). BRAZIL *Roraima*: Ilha de Maracá, Rio Uraricoera, 22 July 1987, 1♀ (A. A. Lise, MCN 20061). *Pará*: Belém, Aug. 1971, 1♀ (M. E. Galiano, MEG). *Bahia*: Camacã, Fazenda Matiapã, 16 Oct. 1978, 1♀ (J. S. Santos, MCN 11117); Uruçuca, Fazenda Almada, 26 Nov. 1977, 1♀ (J. S. Santos, MCN 10321).

Metazygia moldira new species

Figures 401–404; Map 4F

Holotype. Female holotype from 15 km E Puerto Maldonado, 12°33'S, 69°03'W, 200 m, Depto. Madre de Dios, Peru, 26 Feb. 1989 (D. Silva D.), in MUSM. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace orange, eye region black. Chelicerae orange with a proximal dusky patch. Labium, endites dusky orange. Sternum light orange. Legs light orange. Dorsum of abdomen white with a black band around anterior (Fig. 404). Venter with a white square between epigynum and spinnerets. Eyes subequal in size. Anterior median eyes their diameter apart, 0.8 diameter from laterals. Posterior median eyes 0.5 diameter apart, 1.2 diameters from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 3.8 mm. Carapace 1.9 mm long, 1.4 wide, 0.8 behind lateral eyes. First femur 2.1 mm, patella and tibia 2.5, metatarsus 1.8, tarsus 0.7. Second patella and tibia 2.3 mm, third 1.3, fourth 1.8.

Variation. Total length of females 3.8 to 5.6 mm. Illustrations were made from the female holotype.

Diagnosis. *Metazygia moldira* is similar to *M. peckorum*, but the posterior median plate of the epigynum is flask-shaped and widest dorsally (bottom of Fig. 402).

Distribution. Western Amazon region (Map 4F).

Specimens Examined. ECUADOR *Sucumbíos*: bridge over Río Cuyabeno, 0.01°S, 76°18'W, 8, 9 Aug. 1988, 1♀ (W. Maddison, MCZ). PERU *Loreto*: Río Samiria, 8–31 May 1990, 1♀ (T. Erwin, D. Silva D., MUSM).

Metazygia valentim new species

Figures 405–408; Map 4F

Holotype. Female holotype and two immatures from São Valentim, Est. Rio Grande do Sul, Brazil, 16 Oct. 1976 (R. Scherer), in MCN no. 04782. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace dusky brown, eye region black. Chelicerae, labium, endites dark brown. Sternum dark brown. Coxae light yellowish; legs light yellowish with tips of tarsi darker. Dorsum of abdomen white with anterior transverse black band; sides with a black patch (Fig. 408). Venter with a black band starting anteriorly from the transverse band and posteriorly enclosing spinnerets. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes 0.8 diameter apart, 0.7 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.6 diameters from laterals. Laterals 0.5 their diameter apart. Height of clypeus equals 0.8 diameter of anterior median eye. Total length 3.1 mm. Carapace 1.4 mm long, 1.1 wide, 0.6 behind lateral eyes. First femur 1.6 mm, patella and tibia 1.9, metatarsus 1.2, tarsus 0.5. Second patella and tibia 1.6 mm, third 0.8, fourth 1.3.

Diagnosis. The epigynum of this species differs from that of other species by having a transverse posterior lip in ventral view (Fig. 405) and a T-shaped posterior median plate in posterior view (Fig. 406).

Metazygia bahia new species

Figures 409–413; Map 4F

Holotype. Female holotype from Fazenda Jacarandá, Itamarajú, Bahia State, Brazil, 9 Dec. 1977 (J. S. Santos), in MCN no. 11030. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange, eye region black. Chelicerae brown. Labium, endites dusky orange. Sternum dusky orange. Legs orange. Dorsum of abdomen with dense white pigment spots and with a black band around anterior (Fig. 412). Venter with indistinct pair of white patches, dusky around spinnerets (Fig. 413). Posterior median eyes 0.9 diameter of anterior medians, anterior laterals 0.7 diameter, posterior 0.8. Anterior median eyes 0.4 diameter apart, 0.6 diameter from laterals. Posterior median eyes 0.4 diameter apart, one diameter from laterals. Height of clypeus equals 0.4 diameter of anterior median eye. Total length 4.2 mm. Carapace 2.0 mm long, 1.4 wide, 0.8 behind lateral eyes. First femur 1.9 mm, patella and tibia 2.3, metatarsus 1.6, tarsus 0.6. Second patella and tibia 2.0 mm, third 1.2, fourth 1.6.

Variation. Total length of females 4.0 to 4.3 mm. Illustrations were made from the holotype.

Diagnosis. Unlike the epigynum of *M. peckorum* (Figs. 391, 392), the two cones on the epigynum of *M. bahia* are medially separated (Figs. 409, 410).

Distribution. Bahia State to São Paulo State, Brazil (Map 4F).

Specimens Examined. BRAZIL São Paulo: Alto da Serra Barreira das Camellas, Nov. 1941, 1♀ (J. Domingo, MZSP 9641); Caraguatatuba, 14 July 1964, 1♀ (Exped. Depto. Zool., MZSP).

Metazygia rothi new species Figures 414, 415; Map 4F

Holotype. Male holotype from Lomalinda, nr. Puerto Lleras, Depto. Meta, 300 m, 3°18'S, 73°22'W, Colombia, Mar. 1988 (V. Roth), in MCZ. The species is named after the collector.

Description. Male holotype. Carapace olive-white, black between eyes. Chelicerae, labium, endites, sternum, legs olive-white. Dorsum of abdomen white with black band around anterior (Fig. 415). Venter dusky with an indistinct pair of white patches. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7

diameter. Anterior median eyes 0.5 diameter apart, 0.3 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1 diameter from laterals. Height of clypeus equals 0.8 diameter of anterior median eye. Second tibia barely thicker than first, without macrosetae. Total length 2.1 mm. Carapace 1.04 mm long, 0.78 wide, 0.41 behind lateral eyes. First femur 0.96 mm, patella and tibia 1.18, metatarsus 0.78, tarsus 0.37. Second patella and tibia 0.94 mm, third 0.58, fourth 0.78.

Note. This delicate, small male might be that of *M. carimagua*. A recent molt may have given the specimen its olive-white color.

Diagnosis. *Metazygia rothi* differs from others by having the sickle-shaped embolus positioned on the conductor and by the shape of the median apophysis and conductor (Fig. 414).

Metazygia cazeaca new species Figures 416, 417; Map 4I

Holotype. Male holotype from Jacareacanga, Est. Pará, Brazil, Oct. 1959 (M. Alvarenga), in AMNH. The specific name is an arbitrary combination of letters.

Description. Male holotype. Carapace dark brown, except for light orange median thoracic region. Chelicerae orange. Labium, endites dusky orange. Sternum orange. Coxae light orange, legs orange. Dorsum of abdomen black with a transverse light band (Fig. 417), sides light. Venter with black trapezoid between genital groove and spinnerets. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.5 diameter. Anterior median eyes 0.5 diameter apart, 0.3 diameter from laterals. Posterior median eyes 0.3 diameter apart, their diameter from laterals. Height of clypeus equals 0.6 diameter of anterior median eye. Endite without tooth. First coxa with minute hook. (Distal leg articles broken off.) Total length 2.1 mm. Carapace 1.1 mm long, 0.9 wide, 0.5 behind lateral eyes. Third patella and tibia 0.7 mm.

Diagnosis. The coloration of the body,

the elongate shape of the abdomen, widest in posterior half (Fig. 417), and the shape of the sclerites of the palpus (Fig. 416) are unlike any other species of *Metazygia*. This species may not belong to the genus.

Metazygia cunha new species
Figures 418, 419; Map 4H

Holotype. Male holotype from Jaboticabal, São Paulo State, Brazil, 4 Oct. 1986 (H. F. do Cunha), in MCN no. 17820. The specific name is a noun in apposition after the name of the collector.

Description. Male holotype. Carapace yellow, eye region black. Chelicerae, labium, endites yellow. Sternum yellow. Legs yellow. Dorsum of abdomen white, with a band around the anterior and an indistinct, transverse, white patch adjacent and posterior to it (Fig. 419). Venter with a pair of white patches on light gray, with another posterior pair of white spots. Carapace with small lobes (Fig. 419). Median eyes large. Posterior median eyes same diameter as anterior medians, laterals 0.6 diameter. Anterior median eyes 0.4 diameter apart, 0.2 diameter from laterals. Posterior median 0.2 diameter apart, 0.8 diameter from laterals. Height of clypeus equals 0.6 diameter of anterior median eye. First coxa with large hook, third and fourth with a macroseta; the macroseta on the fourth coxa on a tubercle. Total length 3.0 mm. Carapace 1.4 mm long, 1.0 wide, behind lateral eyes 0.5 wide. First femur 1.7 mm, patella and tibia 2.2, metatarsus 1.7, tarsus 0.6. Second patella and tibia 1.5 mm, third 0.9, fourth 1.3.

Diagnosis. *Metazygia cunha* differs from others by the shape of the embolus lamella, conductor, and median apophysis (Fig. 418).

Metazygia aldela new species
Figures 420–422; Map 4I

Holotype. Male holotype from Adeia Araçu, Igarapé Gurupi-Uma, 50 km E of Canindé, Rio Gurupi, Est. Pará, Brazil, 2–30 May 1963 (B. Malkin), in AMNH. The specific name is an arbitrary combination of letters.

Description. Male holotype. Carapace orange. Chelicerae dusky orange. Labium,

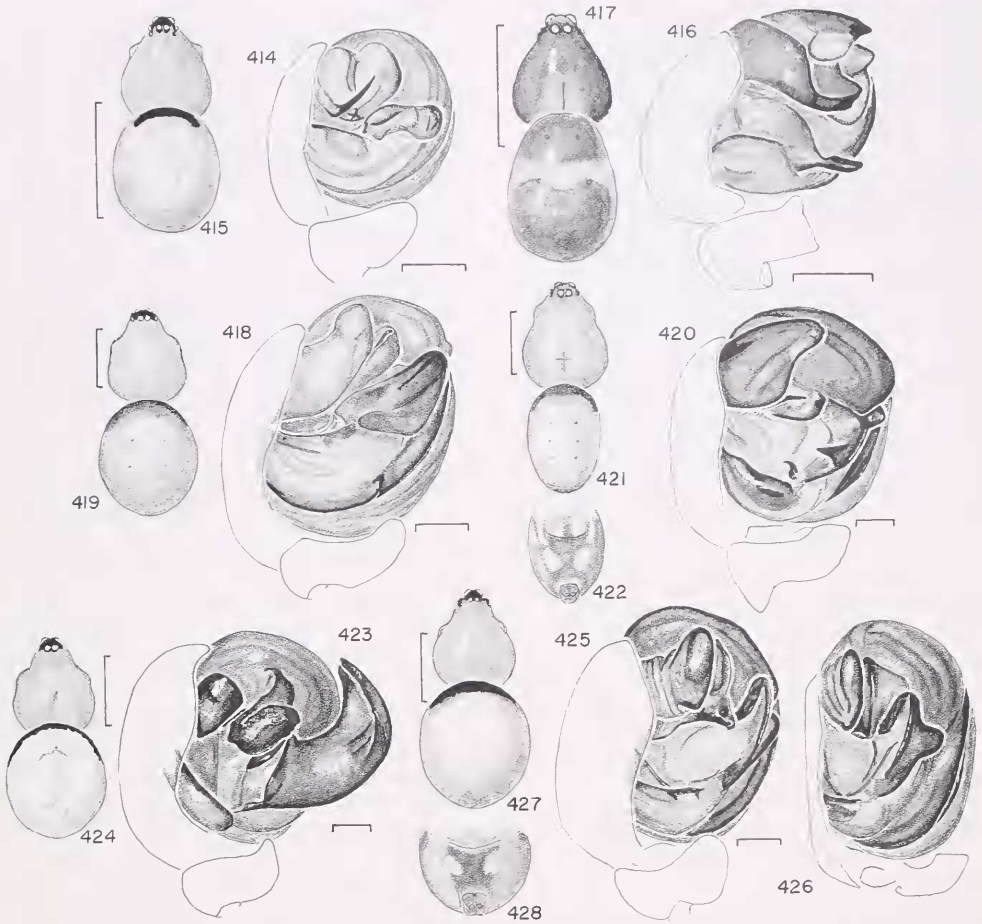
endites dusky orange. Sternum light orange with black on each side. Legs orange. Dorsum of abdomen whitish with transverse black band around anterior (Fig. 421); venter black, with a pair of round pigmentless patches side by side (Fig. 422). Posterior median eyes same diameter as anterior medians, laterals 0.6 diameter. Anterior median eyes 0.6 diameter apart, 0.5 diameter from laterals. Posterior median eyes 0.3 diameter apart, their diameter from laterals. Height of clypeus equals 0.6 diameter of anterior median eye. Carapace with small lobes (Fig. 421). First coxa with large hook. Total length 3.5 mm. Carapace 1.8 mm long, 1.5 wide, 0.6 behind lateral eyes. First femur 2.0 mm, patella and tibia 2.5, metatarsus 1.8, tarsus 0.6. Second patella and tibia 1.9 mm, third 1.1, fourth 1.7.

Diagnosis. *Metazygia aldela* differs from others by the large sclerotized embolus lamella (at 11 hr) and the pointed tooth (at 4 hr) on the median apophysis (Fig. 420).

Metazygia atama new species
Figures 423, 424; Map 4H

Holotype. Male holotype from Fazenda Matiapã, Camacã, Bahia State, Brazil, 14 Oct. 1978 (J. S. Santos), in MCN no. 11078. The specific name is an arbitrary combination of letters.

Description. Male holotype. Carapace light orange, eye region black. Chelicerae, labium, endites brown. Sternum brown. Coxae light orange, legs light orange. Dorsum of abdomen white with black band around anterior (Fig. 424); venter black. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.7 diameter apart, 0.3 diameter from laterals. Posterior median eyes 0.2 diameter apart, 1 from laterals. Height of clypeus equals 0.8 diameter of anterior median eye. Carapace with small lobes (Fig. 424). First coxa with large hook, third with one long macroseta and several smaller ones, fourth with one macroseta. Second tibia thicker than first, swollen in middle with two long macrosetae and some others. Total length 2.9 mm. Carapace 1.6



Figures 414, 415. *Metazygia rothi* n. sp., male. 414, left palpus. 415, dorsal.

Figures 416, 417. *M. cazeaca* n. sp., male. 416, palpus. 417, dorsal.

Figures 418, 419. *M. cunha* n. sp., male. 418, palpus. 419, dorsal.

Figures 420–422. *M. aldela* n. sp., male. 420, palpus. 421, dorsal. 422, abdomen, ventral.

Figures 423, 424. *M. atama* n. sp., male. 423, palpus. 424, dorsal.

Figures 425–428. *M. oro* n. sp., male. 425, 426, palpus. 425, mesal. 426, ventral. 427, dorsal. 428, abdomen, ventral.

Scale lines. 1.0 mm, genitalia 0.1 mm.

mm long, 1.3 wide, 0.6 behind lateral eyes. First femur 1.7 mm, patella and tibia 2.3, metatarsus 1.7, tarsus 0.6. Second patella and tibia 1.6 mm, third 1.0, fourth 1.5.

Diagnosis. The palpus of *Metazygia atama* differs from that of other males by the large median apophysis that faces the cymbium (Fig. 423).

***Metazygia oro* new species**

Figures 425–428; Map 41

Holotype. Male holotype from Río Colorado, El Oro Prov., Ecuador, 4 Nov. 1942 (R. Walls), in CAS. The specific name is a noun in apposition after the type locality.

Description. Male holotype. Carapace dusky orange. Chelicerae orange. Labium,

endites, sternum brown. Legs orange. Abdomen white with a black band around anterior (Fig. 427). Venter black with a pair of white patches (Fig. 428). Carapace with small lobes (Fig. 427). Posterior median eyes same diameter as anterior medians, laterals 0.6 diameter. Carapace with small lobes (Fig. 427). Anterior median eyes 0.8 diameter apart, 0.6 diameter from laterals. Posterior median eyes 0.3 diameter apart, 1.1 diameters from laterals. Height of clypeus equals 1 diameter of anterior median eye. First coxa with large hook, fourth with a short macroseta. Total length 3.1 mm. Carapace 1.5 mm long, 1.2 wide, 0.6 behind lateral eyes. First femur 1.6 mm, patella and tibia 2.1, metatarsus 1.4, tarsus 0.5. Second patella and tibia 1.5 mm, third 0.9, fourth 1.4.

Diagnosis. This species is distinguished by the unique shape of the embolus lamella and the median apophysis of the palpus (above center and at 3 hr, respectively, in Fig. 425, at 10 hr and center in Fig. 426).

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